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ABSTRACT

The present research attempted to isolate any internal and external environmental factors that could be used in determining the optimum or maximum size of senior institutions in California. The structured interview was chosen as the most appropriate technique to accompoish this task. Those schools interviewed were the University of California at Berkeley, Davis, Santa Cruz; California State University at Long Beach, Los Angeles, San Jose, Sonoma; and California Polytechnic State University at San Luis Obispo. The document contains descriptions of each campus. The study recommends that: (1) minimum and maximum enrollment standards should be determined for each institution of higher education; (2) such enrollment standards should be established by the respective governing boards of each segment for each campus within that segment, with the recommendation of that campus and the endorsement of the chief executive of the segment; (3) educational programs, economy of scale, physical community, and internal organization of the institution should be utilized in determining the enrollment ranges. Appendices include interview outlines, profiles, county locations, and population maps. (Author/PG)

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CRITERIA FOR SELECTING CAMPUS SIZE

by

Robert V. Guthrie

Durward Long

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A Report Prepared

for the

Select Committee

on the

Master Plan For Higher Education

HE004737

COORDINATING COUNCIL FOR HIGHER EDUCATION OCTOBER 1973

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FOREWORD

The first serious and widespread concern about the size of college campuses occurred toward the beginning of the decade of student unrest in the early 1960's. We all remember the cry of the embittered student, crushed by the impersonality and bigness of it all: "I am nothing but an IBM card -- do not fold, spindle, or mutilate me."

The concern over campus size continues today, but the dwindling resources available for higher education are causing the focus of concern to shift from the sociological effects of crowding to the need for the most effective use of limited funds through economies of scale. The complaints of the students about campus size seem to be giving way to the cry of the embittered taxpayer who complains: "Why must we have five campuses of 1,000 students each instead of one campus of 5,000 students? We could save the expense of four presidents, four deans, four libraries, four heating and cooling plants, etc."

The question of campus size has been complicated further by the environmentalists and systems theorists who have discovered recently the considerable environmental impact caused by a college campus. The concerns here range from the ecological effect of a campus on the surrounding biota to the disruption of traffic patterns in the local community.

The body of knowledge concerned with the effects of campus size is not very large. We hope we have increased it with this report of

an investigation conducted by Dr. Robert V. Guthrie, Professor and Head, Department of Sociology at Madison College and by Dr. Durward Long, Associate Director of the California Coordinating Council for Higher Education and Executive Director of the Select Committee on the Master Plan for Higher Education.

Owen Albert Knorr
Director

INTRODUCTION

In the early stages of the current review of California's Master Plan for Higher Education, the Legislature adopted Assembly Concurrent Resolution 166 directing that the review include specific consideration of the following question:

> Should standards be set for the size of campuses in terms of the minimum, optimum, and maximum number of students that will permit both efficiency and quality education, and, if so, what should those standards be?[1]

This study was undertaken to assist the Select Committee on the Master Plan in responding to the Legislature's directive.

It is essential to describe briefly the context and the background from which the directive emerged. The report of the 1960 Master Plan Survey Team suggested minimum, optimum, and maximum enrollments for various types of campuses, as indicated in Table 1. In 1971, the Carnegie Commission on the Future of Higher Education recommended that campus size should be reevaluated before "peril points" in enrollments were reached. These "peril points" for specific types of institutions are shown in the last column in Table 1.

Although the Survey Team's recommendations concerning enrollment levels made no direct reference to standards of facilities utilization, it is assumed that the Team had in mind the utilization standards it

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1. Assembly Concurrent Resolution 166, 1971.

had recommended in another section of its report. The recommendations included:

(1) for classrooms, an average of no less than 30 scheduled hours per week, with class enrollments after the first month averaging 60 percent of room capacity;

(2) for laboratories, an average of no less than 20 scheduled hours per week with class enrollments after the first month of the term averaging 80 percent of room capacity. The Team further recommended that in determining the need for additional facilities in higher education, the number of full-time equivalents (FTE) students in the "day" program, from 8:00 a.m. to 5:00 p.m., be used as a basis for planning. The Survey Team's recommendations constituted a reduction from the standards proposed by the 1955 report, *A Restudy of the Needs of California in Higher Education*.[1] Year-round Operation (YRO) was not mentioned in the standards of utilization.

TABLE 1

	Recommendations of the California Master Plan			Carnegie Commission
Type of Institution	Minimum	Optimum	Maximum	"Peril Point"
Community Colleges	400	3,500	6,000*	5,000
State Colleges				
In densely populated areas in Metropolitan Areas	5,000	10,000	20,000	10,000
Outside Metropolitan Areas	3,000	8,000	12,000	10,000
University of California Campus	5,000	12,500	27,500	20,000

* might be exceeded in densely populated areas in metropolitan areas

1. T.R. McConnell, T.C. Holy, and H.H. Semans; *A Restudy of the Needs of California in Higher Education* (Sacramento, California, State Department of Education, 1955), p. 321.

In 1966 the Coordinating Council for Higher Education recommended a slight increase in the Master Plan's utilization standards, as shown in Table 2 below:

TABLE 2

	Classroom Hours	Percent Capacity Utilization	Laboratory Hours	Percent Utilization Capacity
Restudy, 1955	36	67%	24	80%
Master Plan, 1960	30	60	20	80
CCHE, 1966	34[a]	66[a]	20[b]	80[b]
Legislative Analyst, 1968	53[c]	66[c]		
Assembly Concurrent Resolution 151	53[c]	66		

a. 45-hour week (8 a.m. to 5 p.m., 5 days)
b. Lower division laboratories only
c. 70-hour week (8 a.m. to 10 p.m., 5 days)

After a $200-million capital outlay bond issue for higher education had been rejected by the voters in 1969, the Legislative Analyst proposed and the Legislature approved[1] a major increase in facilities utilization. The basic change in the standards was predicted on a longer day of utilization and a higher percentage of hourly utilization. *A fundamental objective of the new standards was to permit a substantial increase in student enrollments* generally throughout public higher education without significant outlays in capital investment. The effect, however, was pressure to increase enrollments of campuses where student demand was greatest rather than generally throughout the public systems. Campuses that reached or nearly reached their maximum enrollment levels [recommended in the Master Plan Survey in 1960 and established by the respective governing board] could achieve

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1. Assembly Concurrent Resolution 151, 1970; see also Coordinating Council for Higher Education Resolution No. 402, March, 1971.

TABLE 3

UNIVERSITY OF CALIFORNIA CAMPUSES

(Except San Francisco)

	Ceiling (FTE)	1970-71[1] (Full-time, Fall '70)	Planned Date of Reaching Ceiling
Berkeley	27,500	26,326	1967-1968
Davis	16,000[2]	12,173	1975-1980
Irvine	25,000[2]	5,433	1990-2000
Los Angeles	25,000[2]	24,564	1967-1968
Riverside	25,000	5,602	1990-2000
San Diego	25,000[2]	5,174	1990-2000
Santa Barbara	25,000	13,186	1980-1990
Santa Cruz	27,500	3,587	1990-2000

1 Excludes approximately 2,500 Medical and Health Science graduate students except for Davis, which excludes approximately 3,000.

2 Excludes Health Science students.

CALIFORNIA STATE UNIVERSITY AND COLLEGES

	Maximum Planned Limit Academic Year (FTE) 8 am-5 pm	8 am-10 pm	1970-71 Full-time, Fall '70	1970-71 Headcount, Fall '70
Bakersfield	12,000	[18,000]	615	971
Chico	12,000	[18,000]	8,778	10,110
Dominguez Hills	20,000	[30,000]	1,949	2,563
Fresno	20,000	[20,000]	10,927	13,647
Fullerton	20,000	[30,000]	8,960	14,149
Hayward	15,000	[22,500]	8,007	11,470
Humboldt	8,000	[12,500]	4,625	5,479
Pomona	20,000	[30,000]	7,046	8,562
Long Beach	20,000	[30,000]	16,029	26,239
Los Angeles	16,800	[25,200]	11,929	21,704
Sacramento	20,000	[30,000]	9,862	14,811
San Bernardino	20,000	[30,000]	1,699	2,269
San Diego	20,000	[30,000]	17,723	25,536
San Fernando Valley	20,000	[30,000]	14,784	22,721
San Francisco	16,000	[24,000]	11,338	17,600
San Jose	17,000	[26,200]	16,101	24,560
San Luis Obispo	12,000	[18,000]	11,054	12,386
Sonoma	12,000	[18,000]	3,131	3,832
Stanislaus	12,000	[18,000]	2,176	2,643

Headcount versus FTE equivalents are presented in the table above to demonstrate another variable in determining campus size and hours of facilities' utilization. The greater the number of part-time students, the more likely is the need for "stretched-out" schedules for facilities' utilization in the evenings. At the same time, extended days may "thin-out" certain classes during the earlier parts of the day, and make unreasonable schedule demands on the faculty.

the new standards in one of two ways. Enrollment on a campus that had achieved the maximum stipulated 8 a.m. - 5 p.m. schedule could be "spread out" over the 8 a.m. - 10 p.m. schedule simply to try to achieve the standard. Or additional students, for which advance planning had not occurred, could be admitted in sufficient numbers to achieve the standard. In either case, the result would not likely be supportive of the educational function, and in the latter case, most likely produce undesirable results. On the developing campuses, efforts to build a balance of specialized programs and facilities through controlled growth would have to be scrapped and general purpose programs substituted. Table 3 shows the maximum enrollment as modified by the extended-day schedule.

In summary, immediate imposition of the new utilization standards on old campuses that had already achieved maximum enrollment, as defined by several criteria other than "hours of facilities utilization," created extremely difficult problems affecting the educational mission. For new, small campuses with more total space than student demand, to accomplish the standards of utilization equally difficult problems were created.

The natural effect of the 1970 utilization standards is to bring a revision in maximum enrollment in order to achieve a standard of facilities utilization without giving attention to many other factors that should be considered before increasing enrollments.

The methods and criteria by which educators and State policy makers arrived at minimum, optimum, and maximum enrollment levels for campuses have not been clearly recorded or articulated. The most consistent refrain in the literature on the subject is the concept of

economy of scale which often appears as the basis for a minimum size. There is little information about optimum size and usually it becomes a result of the relationships of minimum and maximum levels. Maximum campus enrollments have often been set by physical and economic considerations which include economies of scale. They usually represent a level at which a significant dysfunction is thought to occur.

Out of this context, a number of policy questions emerge, many of which cannot be addressed in this limited study. Some of these questions are:

- By what methods will California provide access to higher learning for its citizens who are qualified and motivated to pursue a higher education?
- As the Legislature asked, "Should standards be set for the size of campuses in terms of minimum, optimum, and maximum number of students that will permit both efficiency and quality education, and if so, what should those standards be?"
- If standards of size are to be set, should they be set for <u>types</u> of campuses or for <u>each</u> campus, in consideration of its unique conditions? Who should set them? And what criteria should be used?
- What methods should be utilized to achieve the standards set? How compulsory must redirection be? Who decides?
- What State policies influence and determine these standards? How are they reached and what criteria used?
- Who determines the definition of "efficiency and quality education?"
- What effect do current Legislative requirements for facilities

utilization have upon developing campuses that must build specialized buildings for future growth? For developed campuses which must redistribute and reorganize current utilization to achieve standards which increase the maximum? For a system that has a twelve-year plan based on other measures?

A special report entitled, "Enrollment Ceilings," has been submitted to the California State University and Colleges Board of Trustees by the Office of the Chancellor as this study is being completed and should be consulted for additional information on the above questions.

CHAPTER I

METHODOLOGY

The present research attempted to isolate any internal and external environmental factors that could be used in determining the optimum or maximum size of senior institutions in California. The conclusion was quickly reached that the study could not be a quantitative research project, nor could the use of questionnaires satisfy the time and research requirements. Also, a quantitative sample would not have assured an opportunity to examine, at first hand, the environs immediately surrounding each campus, nor the opportunity to explore in depth the various rationales for campus size. Thus the structured interview was chosen as the most appropriate technique for this particular task.

The structured interview permits an opportunity for in-depth probing and for obtaining additional points of clarification. It also provides the opportunity of duplicating the study by a later research team, which can simply follow the general outline used for the in-depth interviews. (See Appendix A.)

The structured interview has sufficient flexibility to allow for individual styles of response and to permit the respondent to amplify his answers. Whereas this may appear wasteful, in this study it permitted several key people with long and distinguished careers to reminisce about events that led to a major decision. Bits of reminiscence can be crucial in determining the rationale and the chain of

decisions followed in arriving at enrollment limits for both individual campuses and the system as a whole.

After establishing the basic research design as a series of structured interviews, consultation with the Coordinating Council staff and key administrative personnel in both the University of California and the California State University and Colleges, produced a list of campuses representing a wide range of examples in the problem areas to be studied.

1. University of California, Berkeley
2. University of California, Davis
3. University of California, Santa Cruz
4. California State University, Long Beach
5. California State University, Los Angeles
6. California State University, San Jose
7. California Polytechnic State University, San Luis Obispo
8. California State College, Sonoma

The research was conducted in two basic phases. Phase I concentrated on a review and examination of the literature on the historical development of both the University of California and the State College systems. Past reports on campus size, enrollments, and population projections, together with other pertinent information sources, were carefully assessed to ascertain to what degree, if any, the question, "How big is too big?", was ever asked or answered.

College and University confidential records were examined, central administration files were studied, Coordinating Council studies were reviewed, and master plans for Texas, Illinois, Virginia, and Wisconsin were studied with this same question in mind. Datrix

Microfilm Research Services was activated twice with two separate sets of key words to determine the extent of studies of campus size at the doctoral dissertation level.

In addition to a number of studies relative to campus size, three definitive bibliographies were discovered:

1. *How Big?* (a review of the literature on the problems of campus size). Monograph No. 8, August 1970, Division of Institutional Research, Office of the Chancellor, the California State Colleges, Los Angeles.
2. *Campus/Community Relationships:* An Annotated Bibliography (2 volumes), Ira Stephen Fink and Joan Cooke, University of California, Office of the President, Berkeley (1971/1972).
3. *Campus Size:* A Selective Review, Donald J. Reichard, Southern Regional Education Board, Atlanta.

These bibliographies detail virtually all serious research on size and include references to the same documents. However, no study is mentioned in which detailed, lengthy, structured interviews have been conducted that: (1) utilize four significant response groups (administrators, faculty, students and community residents), and (2) focus only on the perceptions of size by these groups and the impact of size on educational and community goals. Thus, the present study is an example of an original research approach, insofar as the available literature reveals.

The four response groups were chosen because each represents not only a significant group in the life of the institution, but also because each group provides a markedly different set of perceptions within a campus, as well as a base for assessing different criteria

that, in the judgment of the respondents, should be used to control maximum enrollments.

Four interview outlines with key questions for each group were developed especially for this study. The outlines and questions were completely open-ended, the respondent was guaranteed confidentiality, and in some cases the interviews ran as long as two-and-one-half hours. For example, one conference with several administrators began at 9 a.m., and ended at 12:45 p.m. In all, 112 interviews were conducted personally by the researcher. As in all depth interviews, the purpose of this technique is to allow the respondent full opportunity to develop complete answers and to allow time to reflect on the answers or to have after-thoughts that might help to enlighten a previous observation. Further, the in-depth interview allows the inquirer to take full advantage of the respondents' expertise, and to question implications of an answer. Additionally, this technique allows the inquirer to assess the intensity of the answer and record it.

In each case, initial contact was made through the office of the chief executive at each campus. Moving from there, additional contacts were made. Often a respondent would suggest, "You should talk with so and so." In these cases referrals were often made to other campuses. In each case, follow-up proved to reveal a valuable source.

A number of "in-house documents" were also acquired by the consultant and are a part of the total project file; however, they are not a part of this report. In the case of one campus, a position paper was prepared and subsequently discussed with the consultant at a lengthy meeting.

CHAPTER II

SUMMARY OF RESEARCH FINDINGS

Definition of Terms

Prior to the criteria analysis of the report, some basic definitions and environmental descriptions are required. The definitions below generally have been accepted throughout most of the literature on the subject and particularly within the various segments of California higher education.

- General Campus - an institution that offers a broad range of arts, sciences and technological studies. It includes graduate and professional training.
- Commuter Campus - has no necessary bearing on the type of instructional program but refers primarily to the nonresidential character of the student body. If a large percentage (over 30%) of the student body drive some distance (over five miles), the campus is considered a commuter campus. (Naturally, all campuses are commuter to some extent.) Consensus among those interviewed seems to center on the percentage and distance criteria described above.
- Urban Campus - a campus either adjacent or proximate to a large or central commercial core within a city whose population is in excess of 100,000.

- Community - the radius around the campus in which direct environmental, economic, and social influences are exerted in a generally reciprocal fashion. Where that influence becomes more indirect than direct the term "community" no longer applies in this study. Although very arbitrary, it appears that radius rarely exceeds two miles. In the case of some campuses, that radius encompasses virtually the entire town; in others the two-mile radius would touch part but not all of the city. Measurement of the radius was in each case taken from the campus core, not the perimeter.
- Campus Core - the area of the campus from which the major administrative and campus-service activities emanate. For example, in the case of the University of California, Berkeley, the community radius line would be drawn from California Hall; at the University of California, Davis, the line would be drawn from Mrak Hall.
- Mature Campus[1] - generally a campus that has reached its ultimate enrollment ceiling and has little opportunity for further growth. Internal change is basically "redevelopment" rather than "development."
- Transitional Campus[1] - a campus in the process of development and evolution. In general, it is

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1. "University of California Environs Survey," Sedway/Cooke Consultants, October, 1970, Vol. I., pp. 8-10.

characterized by cross-roads decisions involving institutional character, its relation to the surrounding community, and its educational role within the system.

- New Campus[1] - fully established within the last decade.

Whenever these terms are used in the body of this report, they will be used with these definitions. Other terms will be defined in context.

Campus Descriptions

A general "in situ" description of each campus follows in an effort to exemplify those unique external characteristics that influenced the decision to include them in this study. Further each campus exemplifies one or more of peril points described later.

1. University of California, Berkeley

By definition Berkeley is easily both a mature campus and an urban campus. To the south on both sides of Telegraph Avenue is a heavy mixture of commercial, residential, and University-owned properties. Between the California School for the Deaf and Blind and the southern campus perimeter is a relatively high income area. Between Fulton Street and Telegraph Avenue are some dilapidated houses with occupants. One house has had several condemned notices but still it is occupied with street people (not students). The Telegraph Avenue area is primarily small shops whose character has changed dramatically

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1. "University of California Environs Survey," Sedway/Cooke Consultants, October, 1970, Vol. I., pp. 8-10.

EXISTING CONDITIONS

BERKELEY

RESIDENTIAL

DWELLING UNITS / NET ACRE

- 0.1 OR UNDER
- 0.0 - 4.0
- 5.0 - 9.9
- 10.0 - 19.9
- 20.0 - 49.9
- 50.0 - 99.9
- OVER 100

UNIT TYPES

- SINGLE FAMILY DETACHED
- SINGLE FAMILY ATTACHED
- GARDEN APARTMENTS
- GARDEN APARTMENTS
- APARTMENTS
- GROUP DWELLINGS

COMMERCIAL

SHOPPING CENTERS and COMMERCIAL AREAS

- NEIGHBORHOOD CENTER
- COMMUNITY CENTER
- REGIONAL or SUBREGIONAL CENTER
- AR ARTERIAL-RELATED SALES and SERVICES

ACTIVITIES

- RETAIL and PERSONAL SERVICES
- AUTOMOBILE SALES and SERVICES
- BUSINESS, PROFESSIONAL, FINANCIAL and ADMINISTRATIVE SERVICES
- MEDICAL and RELATED SERVICES
- COMMERCIAL SERVICES
- HOTELS, MOTELS and RELATED TRAVEL SERVICES

INDUSTRIAL

- RESEARCH and DEVELOPMENT
- LIGHT INDUSTRY
- HEAVY INDUSTRY

COMMUNITY FACILITIES

- PARKS and RECREATION
- E ELEMENTARY
- J JUNIOR HIGH
- S SENIOR HIGH
- JC COMMUNITY COLLEGE
- HOSPITAL
- CC CIVIC CENTER

OPEN USES

- AGRICULTURE or GRAZING
- WOODS or FORESTS

CIRCULATION

- FREEWAY
- HIGHWAY or EXPRESSWAY
- MAJOR ARTERIAL
- COLLECTOR
- LOCAL STREET
- RAILROAD

UCB 2

SEDWAY / COOKE
URBAN PLANNERS

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in the last ten years. They now cater primarily to heavy walk-in trade and fast service. Hamburger stands, soft ice-cream, soft drink stands and the like have replaced many of the older, more traditional businesses. These changes reflect and emphasize the increased population density in the area and the heavy foot traffic on the streets.

Perhaps the most dramatic aspect is the existence of the street people. They range from run-away teenagers to middle-aged, committed gypsies who have not had a permanent address in years. It is impossible to determine their numbers or if they were counted in the 1970 census. In the event they were not (a likely probability), then the density of this area is considerably higher than the present 1,464 per-square-mile density of the county. (See County Location and Population Map, 1970, Appendix C.) However, the judgments of the community people about the University often are based on the assumption that "every young person hanging around the campus is a student." This naturally distorts the number of actual students in the view of many residents who do not, or cannot, distinguish between the street people and the students. Since there is no buffer zone between the campus perimeter and the city proper this judgment is partly justified; in point of fact, many young people in the area are students. What percentage are students, on the other hand, is virtually unascertainable. Of those campuses observed, Berkeley is unique in this regard.

The existence of the large Student Union near Sather Gate has to some degree concentrated the numbers of students at the southern perimeter of the campus. It has also aided slightly in keeping the street people in that same area, thus concentrating them near Telegraph Avenue. In either case, argument can be made to justify the wisdom or

lack of it in the choice of the Student Union location. One administrator justified the choice by stating that good planning "makes more urban an already existent urban situation." The Sather Gate area was already "urban" by force of numbers. The Student Union was merely placed where the people were. On the other hand, overpopulation densities in any area may produce serious social pathologies. The main serious problems as seen by the community are: (1) the occasional violent disturbances (although one long-time resident stated these incidents have been occurring for forty years); (2) the apparent lack of faculty concern for local problems; and (3) the inconveniences resulting from traffic and parking congestion. The first two problems are certainly not the result of size alone; the third seems to be one closely associated with size.

In an effort to mitigate the impact of crowding, campus planning at Berkeley has made it possible to enjoy small, intimate privacy areas throughout the campus. One graduate student (from South Africa) stated, "I am surprised that only a few steps from some heavily traversed footpaths one can find seclusion areas for privacy. On such a large campus with so many students this is a pleasure." This same student stated the alienation most students experience is "largely a function of their own immaturity and unwillingness to ask rather than to be asked."

2. University of California, Davis

This campus is neither urban nor mature. Basically, Davis is transitional. Located adjacent to a relatively small community, it is a "bicycle campus." It has within its perimeter many open spaces between buildings. With a bicycle the distances can be easily bridged;

without one, it is difficult for a person to walk from the temporary medical building complex to the law building in ten minutes. To preserve the open spaces, the bicycle character, and the essentially rural atmosphere of the campus, efforts have been made since the early 1960's to resist reaching the 27,500 enrollment maximum.

The community feels a sense of some relief during the summer when most students are gone. This is manifest in less traffic congestion and greatly reduced parking problems. There is a remarkable difference between the urban character of Berkeley and the confluence of the small town and rural character of Davis. The Davis community is presently engaged in an overall plan to "keep Davis small." The community has discouraged industry, housing developers, and others from inflating the population base quickly. A recent Davis City Council resolution (Appendix D) sums up the community's position.

Access to the campus from the south is through a bottle-neck, narrow-road underpass, which directs heavy traffic flow through the edge of the central business district and has created, in the view of several town officials, "a condition bordering on the hazardous."

Housing near the campus is in short supply. High density housing on the campus perimeter toward the northwest (the Oxford Circle area) may be "another Isla Vista"[1] in the view of several people queried, including several campus administrators. The density of this area is far higher than anywhere else in the entire county.

Although the Davis campus is in two counties, complicating the

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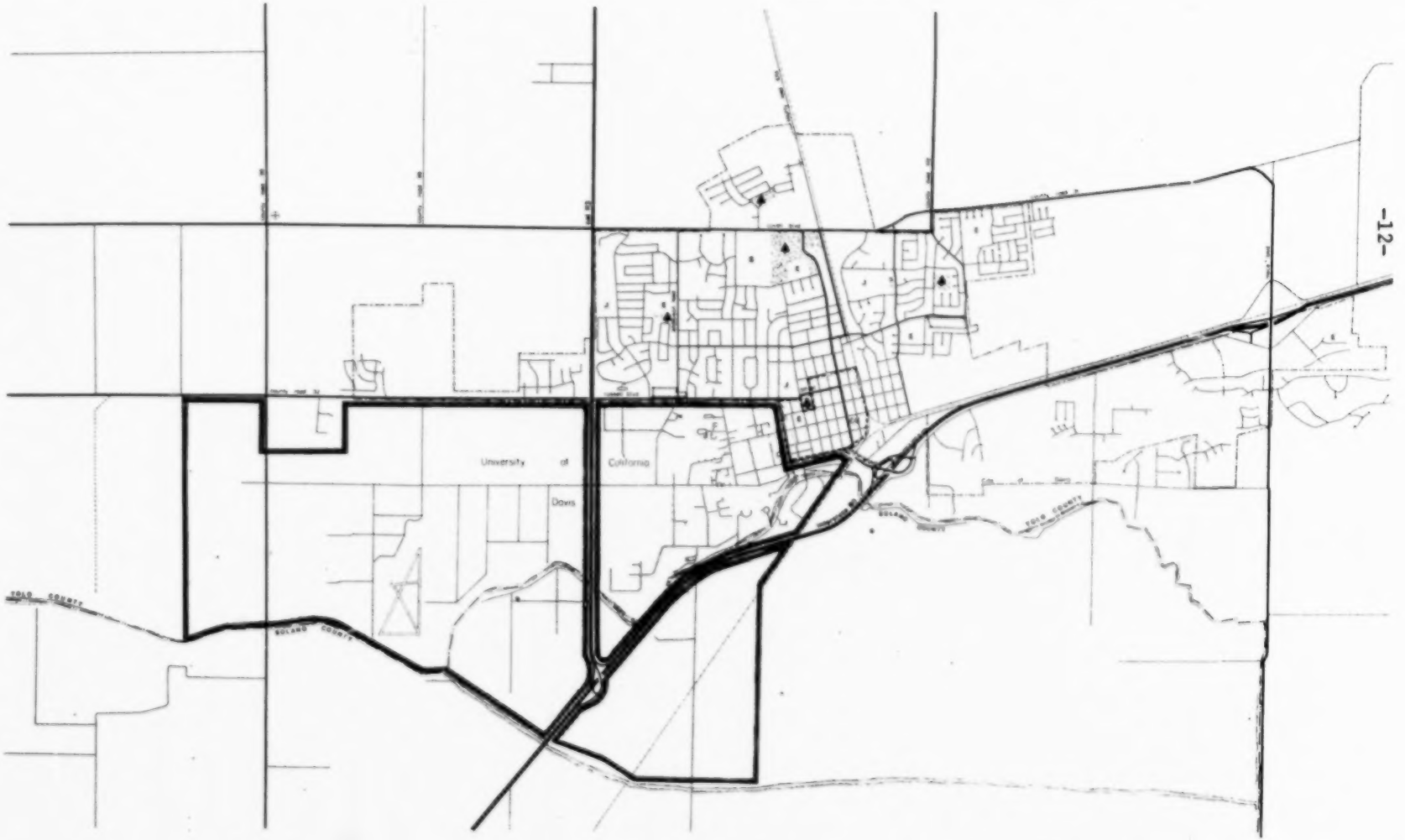
1. A community adjacent to the University of California, Santa Barbara, which has been the scene of violent clashes between campus and community.



EXISTING CONDITIONS

DAVIS

RESIDENTIAL
DWELLING UNITS / NET ACRE
0.1 OR UNDER
0.2 - 4.9
5.0 - 9.9
10.0 - 19.9
20.0 - 49.9
50.0 - 99.9
OVER 100

UNIT TYPES
SINGLE FAMILY DETACHED
SINGLE FAMILY ATTACHED
GARDEN APARTMENTS
GARDEN APARTMENTS
APARTMENTS
GROUP DWELLINGS

COMMERCIAL
SHOPPING CENTERS and COMMERCIAL AREAS
NEIGHBORHOOD CENTER
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COMMERCIAL SERVICES
HOTELS, MOTELS AND RELATED TRAVEL SERVICES

INDUSTRIAL
RESEARCH AND DEVELOPMENT
LIGHT INDUSTRY
HEAVY INDUSTRY

COMMUNITY FACILITIES
PARKS AND RECREATION
E ELEMENTARY
J JUNIOR HIGH
S SENIOR HIGH
JC COMMUNITY COLLEGE
HOSPITAL
CC CIVIC CENTER

OPEN USES
AGRICULTURE OR GRAZING
WOODS OR FORESTS

CIRCULATION
FREEWAY
HIGHWAY OR EXPRESSWAY
MAJOR ARTERIAL
COLLECTOR
LOCAL STREET
RAILROAD

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UNIVERSITY OF CALIFORNIA CAMPUSES ENVIRONS STUDY

political process of annexation, the major part is in Yolo County. The county density was 26.3 in 1940, with a total population of 27,243. By 1970 the population had grown to 99,788 but was still less than Humboldt County, even though Humboldt reported a loss of population from 1960 to 1970. With 15,000 students, the Davis campus could be viewed as having nearly 20 percent of the entire county's population and a considerably higher percentage of the population of Davis. A change in size of this campus even at a low order of magnitude will have, as in the past, enormous consequences for the community. The University is virtually the entire town, employing nearly half the city's labor force, virtually all professional-level people, and practically all of the youth population. Since the campus represents such a substantial proportion of the town and county population (due in part to the agricultural character of the county) slight fluctuations will be transmitted rapidly to the community.

Alternatives have been suggested to accommodate more students, but if the increase is adjacent to the town of Davis, no matter what the campus internal structure, the impact in the community could still be deleterious. The Campus Environs Survey states:

> The growth of the campus has created severe circulation and parking problems in city areas nearby . . . housing will be a major problem for university-related people . . . zoning, too, provides densities too low for recent enrollment and student ceiling estimate, and inadequate vacant land for apartments.[1]

The Survey assumes that an increased use density of peripheral land would partly solve the problem. However, in the judgment of the

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1. Sedway/Cooke, op.cit., Vol. I, pp. 5-6.

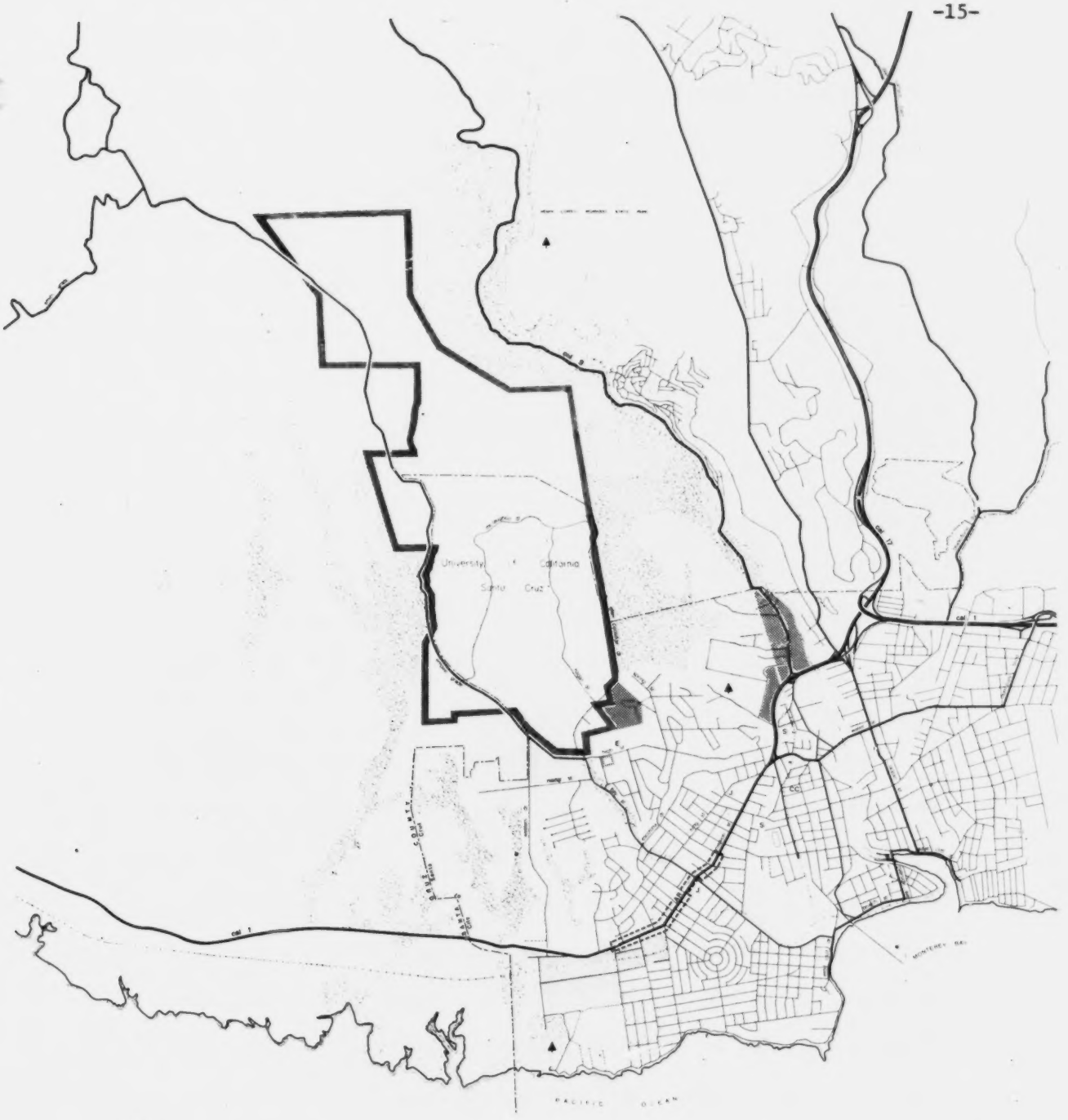
consultant, with present community resistance, a change in zoning that would develop present vacant land to high density occupancy is a condition that the present community would not likely tolerate.

3. University of California, Santa Cruz

The University of California, Santa Cruz, is a new campus located slightly to the north of the city of Santa Cruz. Travel from U.S. Highway 1 to the campus takes one through the northern perimeter of the city. The central business district is located a full two miles from the campus core. Between the campus core and the campus-city perimeter are several hundred acres of pasture and grass lands. In addition, State forest, agriculture or grazing lands insulate the campus outwardly to the east, west, and north.

It is in the south that the main physical contact with the community is made. Internally, the campus cluster colleges are further insulated, with parking lots and many of the buildings hidden from the roads by trees and shrubs. This is not true of all of the cluster colleges but is true for most.

Officials of the city of Santa Cruz reflected a tension between the campus and the community based on what they conceive to be a breach of promise on the part of the University of California. U.C. Santa Cruz, they feel, was originally designed as a general campus with a maximum enrollment of 27,500. However, the character has been changed to essentially a liberal arts campus. The plans of the campus do not now include an engineering school and other professional schools that aid in bringing a fully balanced student body to the community, they maintain, and thus not only has the planned campus size been changed



EXISTING CONDITIONS

SANTA CRUZ

RESIDENTIAL

DWELLING UNITS / NET ACRE

- 0.1 OR UNDER
- 0.2 - 4.9
- 5.0 - 9.9
- 10.0 - 19.9
- 20.0 - 49.9
- 50.0 - 99.9
- OVER 100

UNIT TYPES

- SINGLE FAMILY DETACHED
- SINGLE FAMILY ATTACHED
- GARDEN APARTMENTS 2 STORY
- GARDEN APARTMENTS 3 STORY
- APARTMENTS OVER 3 STORIES
- GROUP DWELLINGS

COMMERCIAL

SHOPPING CENTERS and COMMERCIAL AREAS

- NEIGHBORHOOD CENTER
- COMMUNITY CENTER
- REGIONAL OR SUBREGIONAL CENTER
- AR ARTERIAL-RELATED SALES AND SERVICES

ACTIVITIES

- RETAIL AND PERSONAL SERVICES
- AUTOMOBILE SALES AND SERVICES
- BUSINESS, PROFESSIONAL, FINANCIAL AND ADMINISTRATIVE SERVICES
- MEDICAL AND RELATED SERVICES
- COMMERCIAL SERVICES
- HOTELS, MOTELS AND RELATED TRAVEL SERVICES

INDUSTRIAL

- RESEARCH AND DEVELOPMENT
- LIGHT INDUSTRY
- HEAVY INDUSTRY

COMMUNITY FACILITIES

- PARKS AND RECREATION
- E ELEMENTARY
- J JUNIOR HIGH
- S SENIOR HIGH
- JC COMMUNITY COLLEGE
- HOSPITAL
- CC CIVIC CENTER

OPEN USES

- AGRICULTURE OR GRAZING
- WOODS OR FORESTS

CIRCULATION

- FREEWAY
- HIGHWAY OR EXPRESSWAY
- MAJOR ARTERIAL
- COLLECTOR
- LOCAL STREET
- RAILROAD

UCSC2

SEDWAY / COOKE URBAN PLANNERS

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OFFICE OF THE VICE PRESIDENT — PHYSICAL PLANNING AND CONSTRUCTION — UNIVERSITY OF CALIFORNIA

UNIVERSITY OF CALIFORNIA CAMPUSES ENVIRONS STUDY

but the entire character has been altered in a way that did not reflect community needs or wishes.

In contrast to the Davis community, Santa Cruz seems able and willing to accept a larger enrollment, possibly 27,500, but not a campus composed of "that many liberal arts students who feel an urgent need to radicalize the city of Santa Cruz." Since the Santa Cruz campus is predominantly residential, the housing problem that might be created by large numbers of students is largely mitigated. However, ancillary problems such as transportation and other services are not solved by a residential campus.

A basic internal organizational characteristic (the cluster colleges) offers promise of alleviating any future crowded conditions on the campus, but it does not necessarily prove to be any relief from the pressure of size on the community.

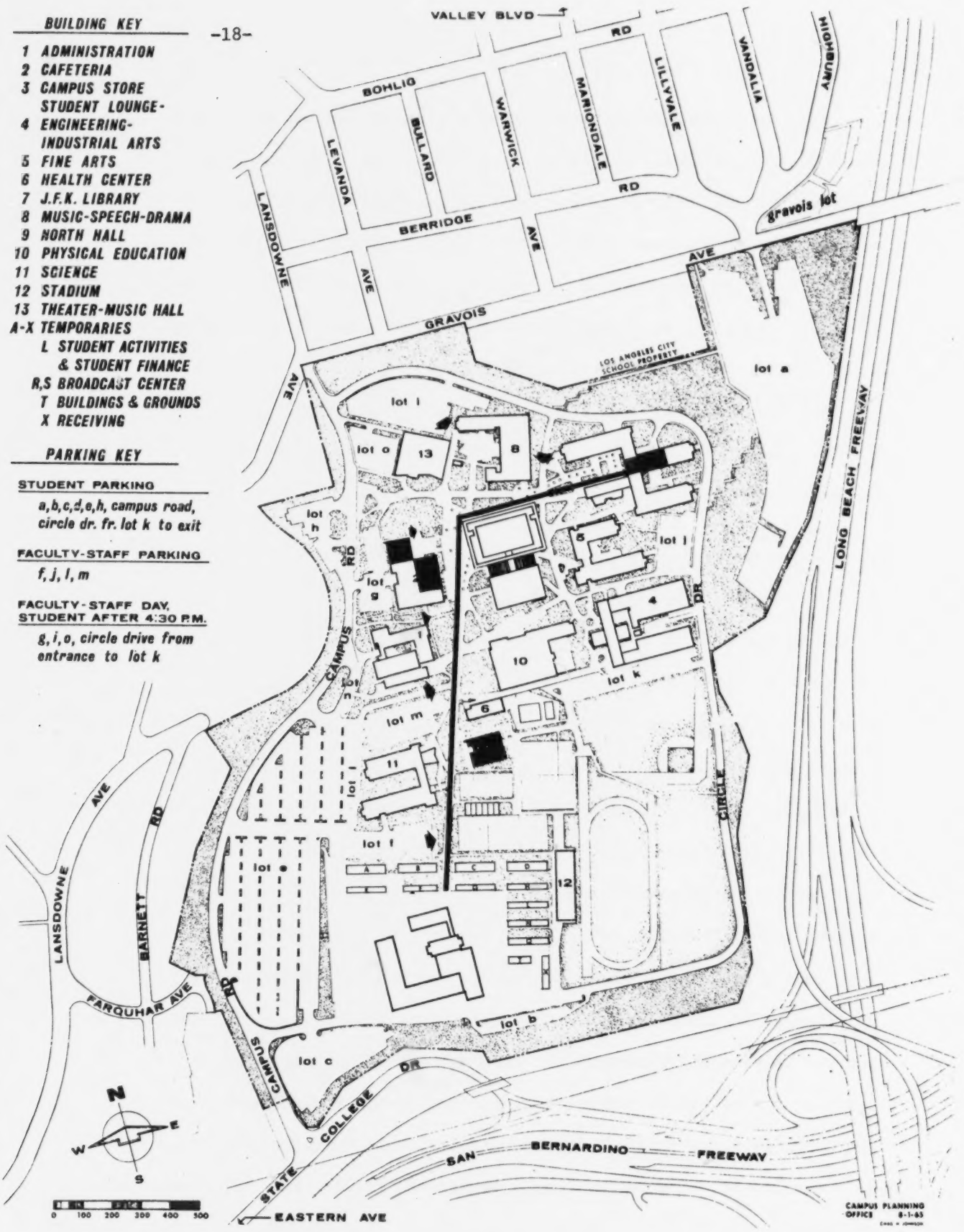
The cluster college has been accepted by many as a viable and valuable educational concept. It concentrates most daily activity and services in an area of a larger campus. Naturally, there is some duplication in facilities, and in residence houses for each college, which has been argued by some as lacking in both efficiency and general economy. On the other hand, argue the proponents, the educational benefits outweigh any reasonable added inconvenience and expense. Insofar as the community is concerned, the internal organization of the campus is not nearly as important as the change in the University's original "stated policy." It cannot be stressed too much that changes in campus policy, size, or character have an enormous impact on the surrounding community when the campus comprises a large proportion of the community's physical and human resources.

Also, the community sees the contrast between it and the campus students as a political threat to their community. A recent vote showed 99 percent of the registered student voters in a precinct voting for a proposition, while nearly 70 percent of the inhabitants of other city precincts voted against it. Some city officials remarked, "What's it going to be like when there are three times as many students in the university as there are now?"

In this case, both perceived and planned size of the campus and the internal student mix are reciprocally functional in producing community tension.

4. California State University, Los Angeles

This campus is located in the eastern part of Los Angeles, north of the San Bernardino freeway (a major east-west central Los Angeles artery). To the east of the campus is the Long Beach expressway. In a sense, the campus is actually closed-in abruptly by steep rising land to the northwest and by major thoroughfares on the south and east. Although it is urban (in one of the largest cities in the U.S.), the campus is also somewhat isolated by these external topographical conditions. It is characterized as suburban by some. As a commuter campus, it is virtually unrelated to any part of the community surrounding it. No students live on the campus (no residences are provided). In addition, the students do not even live near the campus, but two to five miles distant for the most part. Most students use private cars or public transportation. California State University, Los Angeles, is an isolated, urban, transitional, commuter campus. As a result, in the minds of campus personnel, parking and transportation



CALIFORNIA STATE COLLEGE at LOS ANGELES

problems are often uppermost since they represent some of the most serious conditions to campus accessibility.

The campus administration has calculated that the "average student" is 26 years old, carrying 10 1/2 class credit hours per week, and is employed approximately 24 hours per week. This average student spends approximately one hour per day in commuting time. Since there is virtually no "community" surrounding the campus, it was apparent that querying residents on the other side of the freeway would be useless. Some nearby residents complained that cases of lengthy delays (up to seven years in some instances) were encountered in site acquisitions by the University. The delay was in no way related to overall size, but community tension was indirectly created by the problems associated with growth.

At the Los Angeles campus, faculty pressures for reduced work-load and student pressures for more individualized treatment appeared to be the major reactions to size (as they were on nearly every campus visited).

There is some substantial campus congestion, partially mitigated by open space planning. However, two large high-rise buildings create high density use in the areas adjacent to them, so some of the mitigating effect is lost. Heavy construction on the freeway and Eastern Avenue exit add to the problem of campus access. When the construction is completed, congestion will be lessened partly at the access, but parking and on-campus movement will still be difficult. This was more pronounced than other campuses. Wilbur Smith & Associates, Inc. concluded the following in their consultant study of 1971.

> The existing college vehicular circulation system is grossly inadequate for present needs . . . future growth in enrollment may be limited by access roads and parking capacity unless immediate steps are taken to implement the plan . . . of this report. The California State College, Los Angeles, road system should be reviewed periodically in an effort to be abreast of changing traffic developments.[1]

The study further concludes that if California State University, Los Angeles reaches it 21,000 FTE enrollment (8 a.m. - 10 p.m.) there would be 6,000 inbound cars during the peak ten hours, requiring a minimum average of 600 vehicles per hour. At 18,000 FTE enrollment, the inbound cars number approximately 3,600 cars during peak hours. The consultants recommend that 4,600 vehicles per hour be assumed for design purposes.

California State University, Los Angeles, could be easily held to a maximum size because of automobile accessibility, and not because of any other major reason.

5. California State College, Sonoma

This campus is located between Rohnert Park Expressway on the north, East Cotati Avenue on the south, and Petaluma Hills Road on the east. In a general westerly direction and somewhat distant from the campus lie the small towns of Rohnert Park and Cotati.

After viewing aerial photography of the campus by the Sonoma County Planning Department, Sonoma State College Environs Study stated:

> One has the feeling of near endless space with vistas from the campus in all directions in this rural

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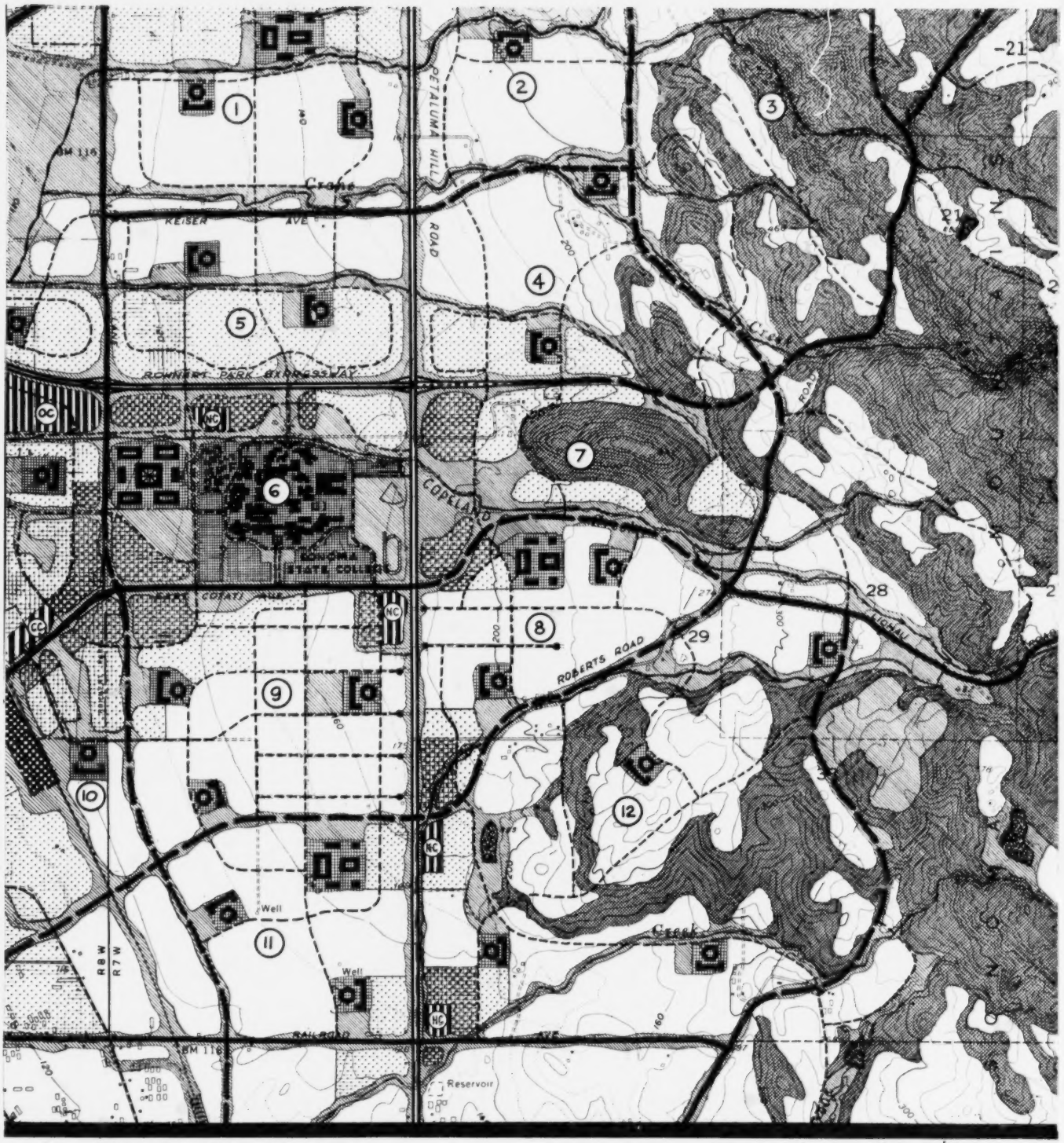
1. Wilbur Smith and Associates, "Traffic Study and Report, 1971, California State College, Los Angeles." Letter of transmittal, October 1, 1971.



LEGEND:

- EXPRESSWAYS
- EXISTING / PROPOSED MAJOR ARTERIALS
- COLLECTOR STREETS
- OPEN SPACE
- STEEP SLOPE
- HIGH SCHOOL
- JUNIOR HIGH SCHOOLS
- ELEMENTARY SCHOOLS
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- LIGHT INDUSTRIAL
- COMMERCIAL
  - NC - NEIGHBORHOOD
  - CC - COMMUNITY
  - OC - OFFICES
- (7) RESIDENTIAL DISTRICTS

1" = 1000'

SONOMA STATE COLLEGE ENVIRONS PLAN

ROHNERT PARK - COTATI AREA, SONOMA COUNTY, CALIFORNIA

SONOMA COUNTY PLANNING DEPARTMENT - SEPTEMBER 1971

> setting. However, as experience has shown in other areas, the present status of surrounding farmlands will change considerably in the near future.[1]

The campus is the newest and most rural of the campuses studied. The population of Sonoma County was 69,052 in 1940. By 1970 it had almost tripled, to 204,885.

Furthermore, during the 20 years from 1940 to 1960, the county population grew by approximately 78,000 people. From 1960 to 1970 alone, the county grew by 57,000 people. The lands surrounding the campus can indeed be easily transformed from rural to urban. The concern of the officials of Rohnert Park and Cotati is well founded: "Every major function (and the college is a major function) eats away at the rural lands surrounding."

The campus and community are still experiencing a sense of newness, experimentation, and cooperation between campus personnel and city officials. This is exemplified by the existence of a planning committee composed of campus officials, community officials, and others.

Housing in the valley east of the college is discouraged by U.S. Soil Conservation studies that state "the entire valley is covered by heavy clay soils unsuitable for septic tank operation." If any substantial housing is to be built, a major central sewer system would be required.

Basically, the college administration favors keeping the cities of Cotati and Rohnert Park contained to the west and the essential rural character of the environs of the campus maintained as "an essential ingredient in the quality of education available on the campus." They

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1. Sonoma County Planning Department, with the cooperation of the Sonoma State College Study Committee, "Sonoma State College Environs," September, 1971, p. 2.

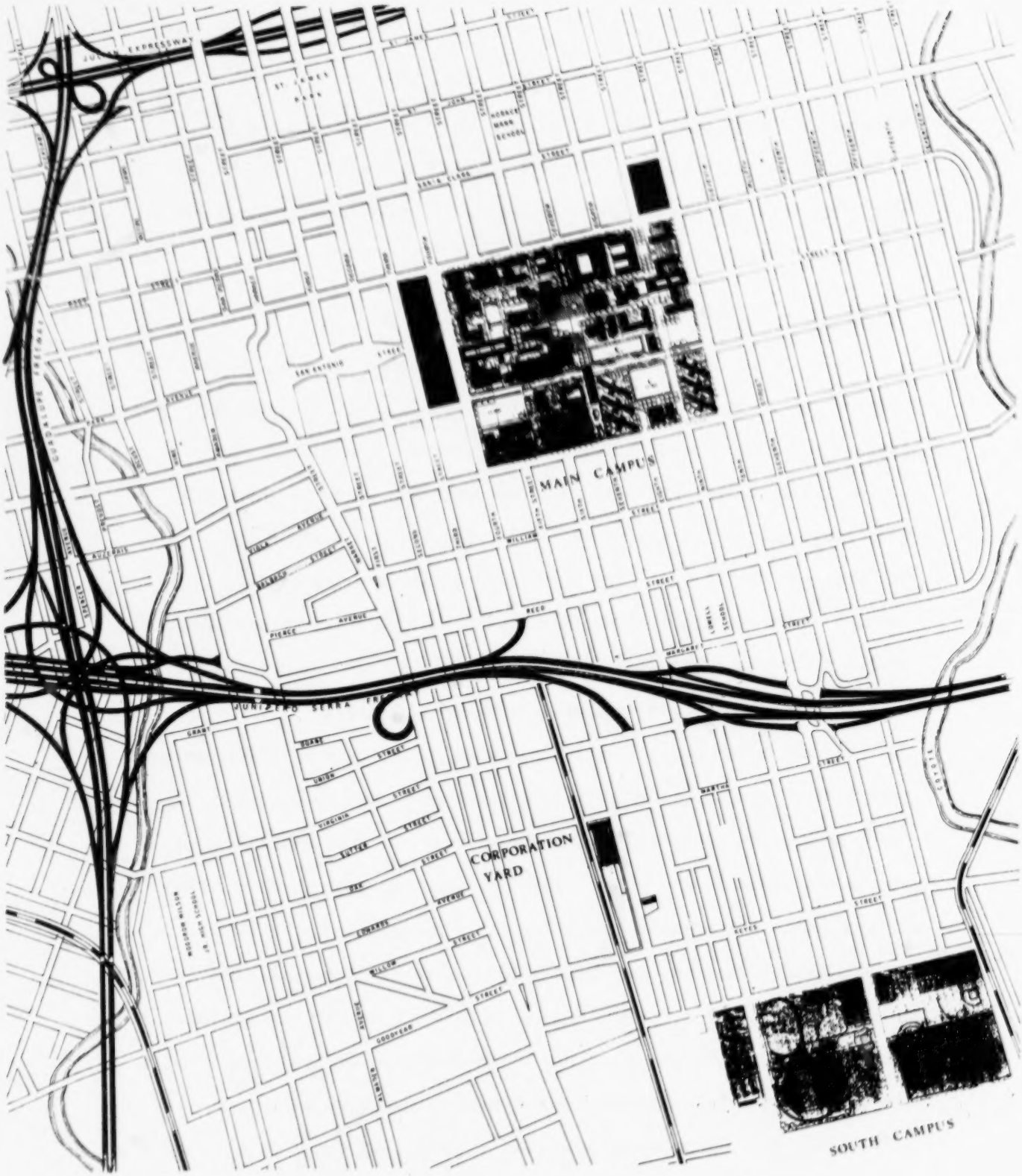
contend that continuous incursions into rural lands or open subdivision of existing land if allowed, would destroy this rural character. A recent resolution passed by the City Council of Rohnert Park affirms this view. (See Appendix E.)

6. California State University, San Jose

This campus is a mature, urban campus, located in the downtown area of San Jose, a city of over 350,000 population. The campus is surrounded by commercial functions to the west, some single-family and multiple-family, primarily Mexican-American, homes to the south and east. Further to the north, other minority populations are proximate to the campus. Far from slum conditions, the housing is a mixture of lower- and middle-class housing interspersed with remnants of large old fraternity and sorority houses that have been converted into half-way houses and multiple-occupancy dwellings.

Perimeter campus parking is congested during most of the instructional day. A multi-story parking garage has helped to alleviate the problem, but it is often filled and there are not sufficient parking places available on the street. San Jose's main campus comprises one of the smallest land allocations for its enrollment among all the State's senior campuses and the smallest of those campuses studied.

Separating the aeronautics program to the north and the physical education program to the south has alleviated some of the space problem but has created other inconveniences, such as problems in class scheduling, etc. Some green areas still exist, but there is a distinct sense of crowding even though most buildings are separated by hedges and trees.



CAMPUS LOCATIONS — SAN JOSE STATE COLLEGE

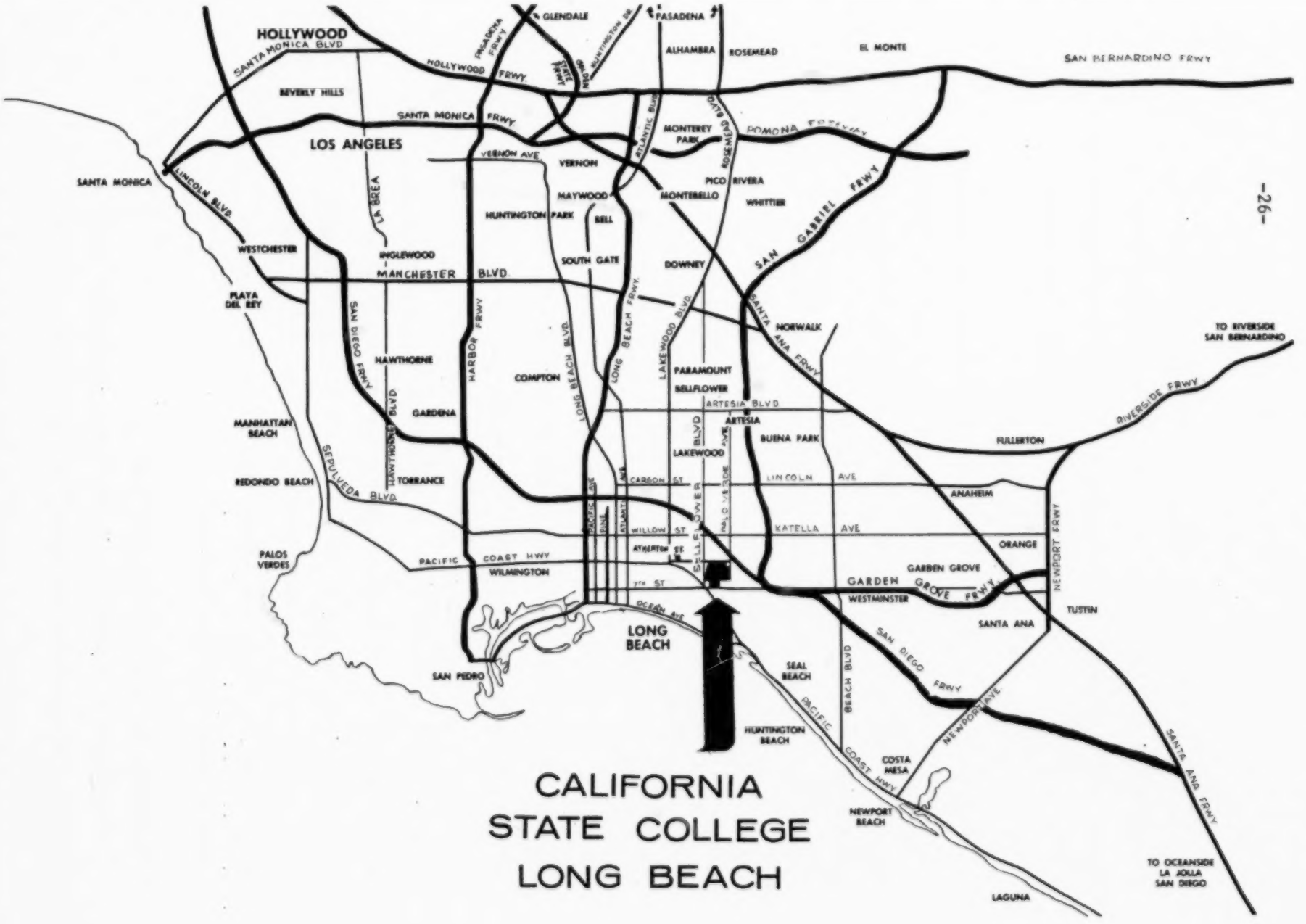
The cost of acquiring new land around the campus is estimated at $250,000 per acre. During peak hours, when a large percentage of the student body is present, the density on the San Jose campus approximates that of some of the most urbanized areas in the world. The density projected would be nearly 80,000 per square mile.

Recent reorganization has brought the undergraduate instructional program into six schools. In the judgment of the campus administration, this should help to alleviate some of the departmental administrative problems arising from increased student enrollment.

In May, 1972, an environmental quality report was submitted assessing the environmental impact of enlarging the Spartan Stadium. Although major enlargements to the stadium complex could have serious environmental effects from traffic, noise, and various added pollutants, enlarging the campus enrollment would not have these effects. The condition of San Jose is not primarily the damage created in the community, but the damage to students and faculty resulting from increasing the campus density beyond its present high level. In such a small area each increase of 75 students increases the acre density by one student. At present there are approximately 270 students per acre, making the density condition at San Jose already critical. If this density were projected to one square mile (640 acres) it would produce a square-mile density of over 150,000. No city of 150,000 population exists in only one square mile, but San Jose's campus presently approximates that condition.

7. California State University, Long Beach

This campus is located in a predominantly residential area, but there are heavy commercial and industrial areas between the campus



CALIFORNIA STATE COLLEGE LONG BEACH

and the ocean. The campus is in the rough shape of a "T", with the heaviest concentration of buildings and use at the base of the T, or to the south. The campus is basically both urban and commuter in character. It is also one of the largest of the State Universities. It is confined to an area of 320 acres and has an overall enrollment of approximately 27,000 students.

The city of Long Beach, which has a population of over 350,000, generally conceives of the campus as another commercial or cultural function and is not threatened by it. The city officials see it as a positive factor in the total city's amenity package.

Major changes in size would have minimal impact if appropriate internal adjustments are made for faculty and student needs. At this campus, size is basically a matter of internal campus adjustment rather than physical impact on the community.

Accessibility to the campus is much easier, though further from the freeway than at California State University, Los Angeles. Wide arterial streets through modest residential areas between the San Diego Freeway and the campus make access even during peak hours relatively easy, as compared to the congestion experienced at San Jose, Los Angeles, Berkeley, and other campuses.

Of the student population, Institutional Research of Student Residence shows that 40.07 percent resides in Long Beach, while Huntington Beach, Torrance and Bellflower each account for approximately 8 percent. The four communities are within a 10-15 mile radius of the campus core and account for 70 percent of the students' residences. Long Beach is serving a local high density urban need. Here, size is related to the internal ability of the campus to adjust to the enrollment, not the environmental quality of the community.

8. California Polytechnic State University, San Luis Obispo

This campus is located immediately adjacent to the city of San Luis Obispo, which according to the 1970 census had a population of 28,036. The county population was recorded at 105,690. Although located inland, the campus is amongst coastal mountains, a short distance from Morro Bay and Pismo Beach. The campus accounts for 24 percent of all government employment in the county. The total government employment in the county is 10,750 out of a total civilian labor force of 37,850.

In discussing the recent economic base growth, Simon Eisner and Associates, Planning Consultants, stated:

> While recreation-tourism-visitor activities contributed to the growth pattern during the 1960's, the unique element of growth during these years occurred in the governmental institutions sector of the local economy . . ..
>
> One specific factor of major importance in this pattern was the rapid expansion of California State Polytechnic College at San Luis Obispo. This educational institution increased its student enrollment by over 160% between 1960 and the present (1971) from a student body of 4,713 to an enrollment of about 12,300 . . ..
>
> Clearly the growth which the city of San Luis Obispo has experienced over the past decade has been rooted substantially in the expansion of the college.[1]

In some respects, the city of San Luis Obispo has "over-built." No serious housing shortage exists immediately adjacent to the campus. As enrollments increase, the vacant apartments become occupied, primarily by students.

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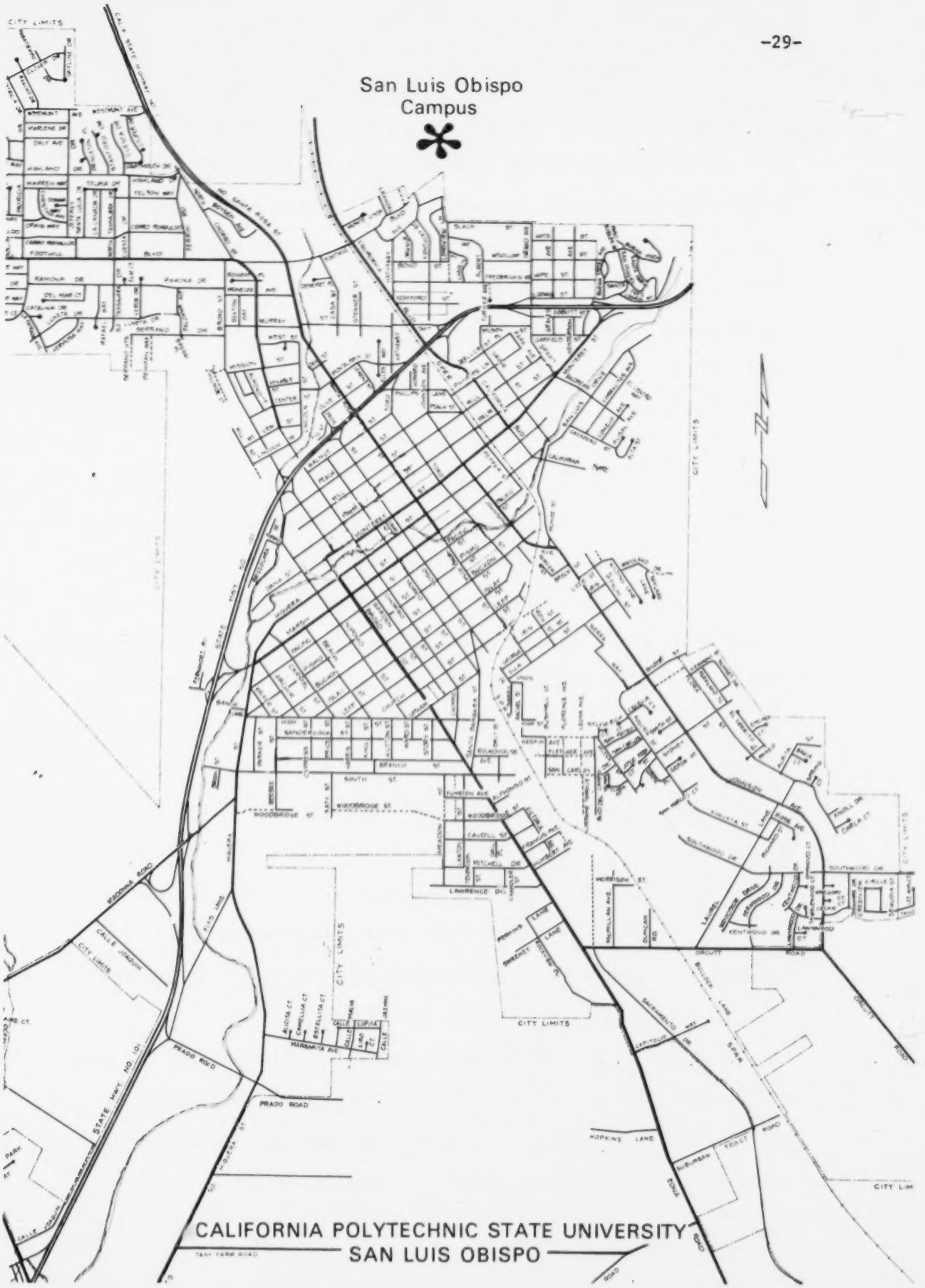
1. Simon Eisner and Associates, Planning Consultants, South Pasadena, California, "Economic Background Data," (for San Luis Obispo County), pp. 8-9.


San Luis Obispo
Campus
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO
CITY LIMITS
PRADO ROAD
STATE HWY NO 101
BROOKS ROAD
CALLE JOAQUIN
SOUTH ST
WOODBRIDGE ST
BRANCH ST
LAWRENCE DR
SOUTHWOOD DR
SUBURBAN ROAD
HOPKINS LANE
SACRAMENTO WAY
CALIFORNIA BLVD
MARGARITA AVE
CALLE JOAQUIN

The basically technological character of the campus is reinforced by both campus personnel and community people. In the view of several members of the community, the technological career orientation is a stabilizing community influence. There is also a strong political tie between the campus and the community; a student is a member of the City Council and a faculty member is the mayor. Slight fluctuations either up or down in campus size can have serious effects on the San Luis Obispo community.

Basic Criteria Concerns

The preceding descriptions of campus environments are not meant to exhaust either all the conditions relating to campus size or those which are unique to each campus. The descriptions merely illustrate general conditions (in addition to or apart from the economy of scale criterion) that can aid in the future assessments of "peril points" beyond which the size of a campus begins to experience increasing dysfunction in several areas.

For example, one administrator argued, "the first indication of a peril point being reached is when the faculty change in their professional role from associate to employee." Although this condition could be mitigated by internal management procedures, it does illustrate a condition that can be identified and subsequently corrected before it begins to damage the institution's instructional goals.

The following responses indicate basic criteria concerns and have been grouped for convenience. The order is generally indicative of priority, but it must be clearly noted that each basic condition was affirmed at every campus as being a "grave situation."

In some cases the responses quoted were impassioned. No attempt was made to lessen the intensity of the response--especially if that specific response was illustrative of several similar responses.

The responses in the interviews fell largely into seven categories:

1. Educational goals and program quality
2. Faculty-student-services critical mass level
3. Campus and off-campus environmental quality
4. Community absorption capability
5. Organizational flexibility
6. Space-land physical limitations
7. System-wide program needs

Not every criterion was mentioned at every campus, but at some all seven were serious concerns. In some cases, campus administrators were working on three or four specific criteria areas, while on other campuses they were concerned with a different combination.

1. Educational Goals and Program Quality

The criterion of universal concern was that of sound educational goals and program quality. At each institution and both central administration offices, program quality was by far the most important concern. In fact, in every mature institution that has "topped out," nearly every administrator, teacher, and student queried felt that the size of the campus had interferred with the basic goal of a sound education for every student. This was expressed in many ways, most succinctly by one administrator:

> Up to about 10 to 12 thousand, the goals of this institution and its program controlled the enrollment. Once we reached 15,000 students the enrollments began

> to control our program. We built new buildings, added new faculty, added new programs, not because we should have, to strengthen our overall goals, but purely to respond to the pressure of large numbers of students.

In short, student demand that exceeds an institution's capabilities produces constant pressure for a more widely diversified program. In responding to large student enrollments, colleges that have been developing a specialized program are coerced to become general campuses; their whole history may not have been in this direction, their master plans may not have included these considerations. Those campuses often cannot recruit faculty in those new departments that suddenly find themselves burgeoning with students. The result has often been a decrease in the general program quality. Dysfunction sets in and a peril point is reached.

This perspective, explained by one administrator, was that "the size of the campus has actually produced a demoralization of both faculty and students." This demoralization, he felt, has made it necessary for the administration to act constantly as arbitrator in minor feuds. A department head in this same institution remarked that each faculty member has become an adversary to his colleague: "He doesn't have enough office space, he can't schedule students because his classes are too large, so he does a lot of his work at home. The students can't find him when they need him and the vicious circle has begun." Another department head was asked to comment on this problem. His immediate answer was to cut the enrollment by 3,000 to 5,000 students; adding faculty, he said, would not solve the problem because the facilities are now being used virtually all the time. The problem rests entirely with the number of students, and in the opinion of most faculty

and students is made even more difficult by inadequate support services. (This criterion will be discussed later.)

Most faculty members feel they cannot deal effectively with many more than 120 students per semester. With a four-course undergraduate load, full load teaching would involve an average of 30 students per class. During the building period of 1960-1970, many classrooms were designed for 45 or more students. Both faculty and administration argue that if establishing a maximum number of students is a sensible plan for an institution, then it is just as sensible to establish a maximum student load for each professor. In fact, many argued, this is the only logical way to arrive at the institution's overall maximum size.

One suggested formula was: total department credit hours produced, divided by 300 (number of credit hours produced by each faculty member), equals the number of faculty members per department. This figure then should be multipled by the number of departments in the institution (total faculty). This figure then should be multipled by 15 (faculty-student ratio), which represents the maximum capability of the institution, provided the physical facilities have been designed to accommodate that number of students.

However valuable any formula, none can be effectively utilized if it does not assume that anything over a 1-15 faculty-student ratio is going to produce less than high quality education. This was the overwhelming judgment of everyone queried. This means that, in the view of faculty, administration, students and even community residents, a healthy campus is one which has an overall 1-15 faculty-student ratio, in which most faculty teach primarily by lecture three or four courses

(undergraduate) to a maximum of 120 students. Oddly, descriptions of other alternative characteristics of a sound educational unit were infrequent. Further, a "healthy campus" is perceived as one with flexibility enough to allow for far less students per faculty member where appropriate to the educational needs, such as doctoral programs, medical schools, etc. A large number of administrators and faculty members said that the switch from credit hours produced to contact hours would not be necessary if a department were evaluated to see how it functions to achieve its goals.

Whatever system of control is adopted, a plan that overloads faculty members by adding large numbers of students to departments in which faculty recruitment or facilities are problems, will erode the educational quality of any institution, many argued. The almost universal pride in their work was often expressed, "We don't want to be the biggest, just the best." This pride can be fostered into quality work throughout many say, "if we didn't have to take so many students into our classes." In most cases, "large classes" were conceived as over 50 students and "medium size classes" were conceived as 20-50 students. "Small classes" were generally favored and ranged from 10-20 students.

Each campus visited indicated a clearly distinctive character. This character in all likelihood should be preserved if it has proven valuable to the State or local community educational goals. The character of an institution, say many faculty, can only be preserved with a "preplanned mix of enrollment by program." In their view, specialized programs such as engineering, agriculture, and architecture, ought not to be destroyed merely to accommodate large numbers of students

uninterested in these fields, but "who want a degree from this school."

One student said, "Colleges should ignite fires of learning. This campus is too big, too impersonal for this purpose."

Educational goals that are constantly changed to meet student enrollment pressures were rejected as valid directions for an institution to take. The respondents felt that an institution must first define itself, and embark on an educational venture that will best serve those students interested in that program. After once establishing this direction, the institution then can make later modifications to meet new technology and other forms of change. "You wouldn't add a law major to a medical school just because 300 students a year wanted to take law at the University of California Medical Center in San Francisco, would you?"

In the view of virtually every person interviewed, program considerations and institutional character are vital, and if allowed to be totally altered merely to accommodate large numbers of students represents a misuse rather than a preservation of public trust. Equally held is the view that a difference in kind occurs as an institution's enrollments increase. It was felt that an inexorable change occurs but that change must be controlled rather than control a campus' future.

2. Faculty-Student-Services Critical Mass Level

The preceding concerns involve complex procedures necessarily initiated at the campus level. This present consideration, however, could require changes in legislative appropriation procedures, equipment replacement procedures, and building-use decisions.

Universally, campus personnel complain of insufficient equipment and support service necessary for the numbers of students enrolled.

Further, they feel the temporary building facilities on new campuses invariably create serious problems. On more mature campuses, faculty often are doubled up in offices, which makes student advising difficult, if not impossible. Equipment cannot be replaced quickly, libraries are under staffed, counseling programs are ineffective because student demand cannot be met by the present staff, and student assistance is at a premium. The prevailing general view is that the State Colleges are supportively dysfunctional.

It should be noted that this problem was not so evident at the University of California campuses studied, but permeated the State Colleges visited. State College personnel feel that enrollment is far in excess of the available services necessary for the job of instruction. One administrator remarked, "The only way to get equipment for a program is to build a new building and include program equipment in the plan."

The indication here is that new equipment or replacement equipment is not being supplied, yet enrollments are not cut back nor can they be, since the budget is dependent on the total FTE enrollment. Instead of FTE, some suggested that enrollments should be based "on the amount of support-service money provided; then we would know how many students we can handle. As it is, we borrow from next year's growth budget and if we hit a reduction year we're in trouble."

One student said, "The present system is like an army that the generals in H.Q. say can't have any more bullets, because they shoot them too fast. Great economy, but a hell of a way to run a war."

The present condition among the State University and Colleges points to a serious situation. The respondents argued that if support services for faculty, students, and administration are <u>in fact</u> consistently

less than required by present enrollments then only three alternatives exist: first, curtail enrollment dramatically while keeping support budgets constant; second, be willing to accept a seriously depreciated educational quality; third, increase fiscal support by increasing support budgets more than enrollments.

Each of these alternatives is itself a problem. The present condition has resulted because increases in size have not been carefully balanced with faculty-student-services critical mass levels, they further argue.

Many administrators warn that an even more invidious condition is arising as a result of inappropriate support services coupled with heavy pressure on faculty to accept more students. They say this lack of support service is leading directly to unionism among faculty. Further, they fear faculty unionism will cost the State of California many millions of dollars more than it now spends on higher education with no gain in educational quality. Faculty in the State University and Colleges, and increasingly in the University of California, are becoming increasingly hostile to a system that "asks you to take more and more students, work longer hours, but won't provide adequate working conditions or services to do the job." As one faculty member said, "Today's complex world requires more than a log, a teacher and a student, if education is to be totally effective." Faculty and students and administrators are becoming adversaries because support services are not adequately assessed within the educational goals.

Just as there is a "critical mass" at which most departments feel they can function at best efficiency--and as much literature alludes to a critical size for campuses--so, too, must all planning include in

its deliberations a faculty-student-services critical mass. At this critical mass point, a department that takes on more students simply cannot function as well as it did unless it is provided with increased services to facilitate the task. One retired executive who enjoyed excellent rapport with his faculty, even during some of its critical growth, adopted the policy of "rewarding" his faculty not by salary increases but by providing the department with additional support services, such as secretarial help, new typewriters, and additional student aid. Rather than creating dysfunction and dissension between the departments, it created a loyalty to the administration, "because he gave us the tools to do our jobs."

3. Campus and Off-Campus Environmental Quality

Although an argument could be made that this criterion is a part of the following one (Community Absorption Capability), it is being treated separately because both environmental quality and community absorption capabilities were given separate attention by administrators, faculty and community residents. Generally, it has only been very recently that campuses have indicated an awareness that they are in a sense a part of a larger environmental setting.

The University of California retained Sedway/Cooke (Urban and Environmental Planners and Designers) to perform an environs analysis of every University of California campus and its immediate environs. The result was an extensive environ analysis and topographical maps.[1] The study states:

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1. "University of California Environs Survey," Sedway/Cooke, Urban and Environmental Planners and Designers, October, 1970.

> In general, the environs of a University campus should be primarily a service area to the campus, particularly for new and transitional campuses not yet past some crucial stage of development, and should remain consistent or at least compatible with the campus in terms of functional relationships, visual impact, activities, circulation, and urban design.[1] [Emphasis added]

The above indicates that the study has a basic underlying erroneous implication that the environs ought to adapt to the campus, more than the campus to the environs. This implication is common not only in California but throughout the nation. Until recently, most institutions felt that the community need not, or perhaps should not, be consulted when serious changes in growth were contemplated. Rarely was the community consulted as to the advisability of that growth. This approach has been shown to be substantially in error.

The environmental impact of several campuses (if not all) has produced drastic alteration to the surrounding environs. Only very recently have environmental devices such as hiding buildings among trees or allowing buildings to retain their natural stone color to blend into hilly contours been employed. In most cases, insufficient size and traffic controls within the campus have produced problems in the arteries to the campus and have created serious problems for the community.

Although many types of environmental problems could be cited, this section is concerned essentially with housing and building quality immediately adjacent to the campus.

Campuses make demands for housing because large portions of the

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1. Ibid., Vol., 1, p. 11.

student body do not live at home nor do they wish to live in campus dormitories. Once housing is built, there is usually pressure from the community to assure that it will be filled. If a large percentage is not, pressure for enrollment increases is produced. In one case a community actually allowed housing to be overbuilt, but under-serviced the student body in other aspects, such as public transportation and recreation. This has created problems that would not have occurred had a lower maximum enrollment been set and housing construction coordinated with campus growth.

At almost every campus, environs are a problem for the administration, e.g., at Sonoma it is a "tent city", at San Jose, the campus is jammed into a 75-acre tract abutting the central downtown business district, at Berkeley the campus abutts a business district, is immediately adjacent to an upper-income residential community, while a few blocks away are some dilapidated houses filled with combinations of students and street people. All other campuses provide variations on the same theme. In every case the campus affects housing values, housing types, population density, and occupancy rate of large portions of areas near the campuses. The ability of the community to absorb this impact is crucial.

Naturally, other factors prevail. One Chamber of Commerce official stated, "You can't blame housing inflation on the campus. Building costs, high labor costs, our distance from a metropolitan center--all militate to raise prices." Another city official in the same community remarked, "Of course the size of the campus is an important factor in housing type and cost. Faculty want nice homes and can pay for them. Students will gang up and rent apartments together. They keep prices

up. Where is the secretary in my office going to live? She has to live in another town close to here, because she can't find adequate housing at a price she can afford."

A campus can alter the environmental character of the community around it. In a large area such as Long Beach this may not be too serious. But in an area like San Luis Obispo, it could be revolutionary to the community.

4. Community Absorption Capability

This criterion was recognized by administrators, faculty, and students, and expressed particularly by people who were not members of the campus staff. In general, key community people were interviewed: mayors, city planners, city and county architects, local leading businessmen, and people who lived immediately adjacent to the campus. At times they expressed a concern equal to that of the campus personnel. In two cases resolutions have been passed requesting that the campus size be controlled. One resolution stated:

> Now, therefore, be it resolved by the Council of the City of Rohnert Park that it does hereby recommend that the enrollment at California State College, Sonoma, be limited to not more than 10,000 full-time students with an emphasis being placed upon off-campus facilities and programs through an expanded extension service in order to provide education for additional students and that such limitation upon the number of full-time students at the campus should be accompanied by an adopted policy of giving preference to students, applying for admittance, who live within the area for which said college was located and designed. (See Appendix D.)

Small communities are concerned about the maximum enrollments of campuses. Naturally, they do not want a giant to come in and totally dominate the economic, social, and political life of the community. A campus of 20 to 30 thousand students within a community of 40 to 50

thousand can alter the community character so dramatically as to be traumatic to that community's future. Decisions that allow these conditions to exist may invite community hostility and even reprisals.

In most cases this community attitude of concern was confined largely to small communities. However, one official in a large urban area remarked, "A change in size of the campus from 10 to 15 thousand students increase would have a very powerful impact on this community. Right now the community as a whole has no concept of the size of the campus. It could, though, if the campus grew much larger."

In small communities it was a different story. Relations between campus and community are generally good, although sometimes strained, in Sonoma, Davis, Berkeley, and San Jose. Relations border on tension at Santa Cruz and San Luis Obispo. The relations are generally apathetic in Long Beach and Los Angeles. In general, the community officials are aware of the problems and are willing to respond to an *open system of mutual concern*. One community official remarked that UC Berkeley "doesn't give a damn about our problems." He went on to say that Berkeley professors "go half-way around the world to do research but ignore the thousands of street people on their doorstep." This kind of borderline tension may be reduced by effective research and planning overtures on the part of the University.

In addition, student political power is often threatening to the community's values. Most community residents interviewed to some degree, view this with alarm. In a number of cases young students have run successfully for political office. In the cases the consultant interviewed they evidenced a keen concern for the community and a seriousness--far beyond their years--for the trust the community has

vested in them. In comparison to other "more mature" city officials, the consultant found them to be more knowledgeable about the campus-versus-community problems than their older, more experienced counterparts.

The greatest tension seemed to be present whenever the campus population was beginning to approach 20 percent or greater of the immediate community. Notable exceptions would be Berkeley, San Jose, Long Beach, and Los Angeles, all of which are larger communities. However, Berkeley and San Jose are both considered too big for the community by most people interviewed. This judgment was based mostly on a reaction to the crowded conditions immediately surrounding the campus. Of the eight campuses studied, only Long Beach and Los Angeles display an apparent indifference to size. One student-city official stated:

> Ultimate size is only half the problem. The other half is the rate of growth. Whereas both are important the controlled rate of growth allows the city time to plan. A campus which has grown 175% since 1960 can and has destroyed the fabric of this community. As both a student and an elected official, I intend doing everything I can to control the growth of this campus. Public education must explore alternatives to new campuses that can drain the taxpayer. On the other hand, to allow campuses to grow unchecked deprives students of a quality education. The university should be open to such things as the satellite campus model. Placing a satellite campus in an economically depressed area near a mature campus may revitalize that community's economic life. In any case, it's a great deal better than providing a mass-produced education and destroying a community.

5. Organizational Flexibility

Expressed primarily by chief executives, this criterion was referred to by virtually all administrators from vice presidents, chancellors and up. The plea was for some degree of experimental

autonomy with complete accountability to regents, trustees, et al. There was no attempt to seek autonomy without accountability, only the contention that conditions can change radically within one semester. Crises appear that cannot be dealt with at the system-wide or legislative level. At that point, line-item budgeting can freeze a decision or immobilize a program. Further, some campus-to-community commitments must be made to insure the institution's good faith. For example, a president or chancellor may be asked, "Are you going to take in more than 500 new students over last year?" If he answers "no" and then is required to accept 700 or 1,000, the loss of credibility may reflect on the entire system.

The ability to phase out programs, combine programs or add new programs is sorely needed, say virtually all executives interviewed. This flexibility must extend to the establishment of enrollment ceilings, set by the campus in consultation with central administrative staff and community representatives. In addition, there must be institutional goals flexibility. Without the opportunity to assess its own goals, an institution can flounder in the sea of "expected enrollments." Unless population hits zero growth immediately, there will still be some pressure to increase enrollments at some campuses for the next decade.

Further, planning for decreased enrollments may be necessary if recent projections are accurate. One campus anticipates a drop of 20 percent in freshmen enrollments under present admission and recruitment policies.

One administrator remarked, "College enrollments are soon to be competitive. The system has got to allow us the flexibility to meet

those problems creatively."

The reciprocal impact of flexibility and size cannot be over-stressed.

6. Space-Land Physical Limitations

One campus has over 6,000 acres while another has 75. Yet the one with 75 acres has a larger FTE enrollment than the one with 6,000 acres. Both are meeting a need, both have a crowding problem. The difference is the physical land available to provide the full range of program along with the density of students per acre during the normal day (8 a.m. to 10 p.m.). The total size of the campus in acres is not generally a major concern except when the acreage is so small as to confine the entire campus population into an unacceptable density pattern.

Rural areas have about 150 people per square mile. San Francisco has a density of 14,000 per square mile. Some college campuses are nearly twice as dense as San Francisco. San Jose if projected to a square mile density would be 10 times more densely populated than San Francisco. This population density causes an enormous drain on facilities, services, and human endurance. If the human scale is to be seriously considered, then the density of living space cannot be ignored.

Reference to the density maps (See Appendix C) shows that some areas such as Santa Clara County have had enormous increases in density. It is in high density areas that the most serious pathological, psychological, and social problems occur. The famous Calhoun studies with overcrowding in Norway rats, showed that even arteriosclerosis

was precipitated by overcrowding. In humans especially students, cheating increases, and hostilities erupt in crowded classes as the density increases. When this is translated to crowded peripheral housing, one can easily see how these social pathologies increase drastically when crowding in a limited space continues.

Many educators have long known that density is a far more important factor than total population, especially in the areas of social interaction, social control, and social pathologies. A factor often overlooked, population density can alter a campus character more than any other demographic characteristic. For example, in a large population, an increased and high density can create demands for land use that will destroy an agricultural program. Accordingly, a campus with very limited space should not have programs that are heavy space users, or it should sharply reduce its enrollments in these programs.

More traumatic, however, is the case of a campus that drastically alters the density pattern of the surrounding community. Twenty-thousand students on 300 acres is a far higher density than 40,000 residents in a six square-mile city. High campus density produces problems that will invariably spill over into the community.

If the density of the campus is allowed to exceed that of the community and few tension releases exist (such as recreational, cultural facilities, and extra-curricular activities) then both the campus and community can expect trouble. At one campus, there is no doubt that nearby recreational facilities have been extremely beneficial in siphoning off some of the tensions created by high-density living.

7. System-Wide Program Needs

This last criterion expressed in the present study reflects an awareness of the campus uniqueness, a desire to preserve that character, but in addition, it evidences an acute appreciation for the entire system's needs. This criterion took two forms:

(1) The system should provide not only for student transfer within the system, but also for faculty transfer.

(2) The system must have the capability of deciding whether or not a campus is to be the specialist in a given area. Duplicate programs can then be combined to have one or two strong programs rather than four or five weak ones. This kind of system-wide "working to a strong suit" is conceived as being capable of providing greatly increased quality. For example, there is no real economy in having a sociology major at a polytechnic institute. In such a case, social science should be a service course that helps engineers, architects, and technicians to better understand the human groups of which they are members. Only at the system level, however, can a decision be made to drop a social science from one institution and reassign the faculty and staff to another. Despite the immediate problems of management, in the view of most faculty and administrators, the future result of trying to make every campus a general purpose campus may have serious adverse effects.

Allowing for system-wide transfers can open up departmental promotion opportunities, and in some cases induce faculty members to take

other assignments where promotion possibilities are increased. It was argued that many large corporations frequently transfer key staff to shore up problem areas.

Only when a system-wide policy is adopted can manpower needs be met adequately and equitably with present staff.

Criticisms of the present system generally resulted from the perception that the central administration (of both systems) fails to act appropriately, rather than interferes with the campus operation. On the whole, both faculty and administrators felt that the central administrations should have adequate staff to perform *local, in-depth research* and then, in conjunction with local campus and community, arrive at growth and planning decisions jointly.

CHAPTER III

SUMMARY AND RECOMMENDATIONS

The survey indicated that administrators, faculty, and other staff in both senior segments have made conscientious efforts to plan for maximum enrollments in ways designed to retain the economies of scale, to respond positively to student demand and facilities utilization, and with regard for the physical environment. The review also confirmed, however, that the exact social and organizational conditions which are most conducive to learning are not agreed upon by the academic community. There was a general agreement, however, that learning conditions should be the primary balancer with economies of scale and facilities utilization in setting enrollment maxima.

The research revealed also that there is a point of size in relation to conditions other than the economy of scale at which a campus begins to become dysfunctional in its educational task. The research also has demonstrated that most of the persons interviewed believe that campus size has much to do with a campus's ability to provide a quality education. But those interviewed were not quite certain about the exact size at which the educational mission begins to be compromised. Because the answers to the questions of maximum size are most illusive, it is tempting to declare that there is no way to tell when a campus is becoming too large. It is important, however, to attempt to find answers to the question if, indeed, it determines educational quality and cost effectiveness.

J.B.S. Haldane wrote that "the most obvious differences between animals are differences of size, but for the same reason the zoologists have paid singularly little attention to them."[1] This same conclusion can be made about colleges and universities. Those character differences are not obvious until one probes into organizational structure and administrative style. But one can tell by simply looking when a campus is large or small, crowded or uncrowded. Haldane argues that every animal has a "best size." That size has been evolved through *selection and function,* "and just as there is a best size for every animal, so the same is true for every human institution. In the Greek type of democracy all the citizens could listen to a series of orators and vote directly on questions of legislation. Hence their philosophers held that a *small city* was the largest possible democratic state."[2]

An institution of higher education is similar to a small city. It has organization, social structure, hiring proximity, subgroup segmentation, social control, and many other human groups and processes. However, a campus does not have population inter-generation continuity--that is, different generations residing for extended periods of time. This highly restricted age concentration aggravates the sense of discontinuity because there is no real "previous generation" (other than faculty and administrators) for students to test values against. Consequently, person to person communication is utterly essential and few substitutes for face-to-face interaction will be tolerated.

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1. J.B.S. Haldane, "On Being the Right Size", Harpers V. 152 (March 1926), p. 952.

2. Ibid., p. 956.

Gallant and Prothero argue that, "In the case of the university, no grand theory of education is needed in order to identify dysfunctions of growth that affect essential activities . . .." They further argue that when a university is "well into the dysfunctional size range, then the obvious solution is to cut back."[1] Other alternatives also exist that can actually keep the enrollment of the system balanced to the State's needs: (1) build new campuses; and (2) decentralize the overcrowded institutions to siphon off the excess.

Gallant and Prothero conclude ". . . we note again that cells do not grow indefinitely. Instead they divide."[2] Using Haldane's observation, animals do not grow very far beyond their "best size." If by some disorder they grow to gargantuan proportions, beyond their optimum, they vanish as a species.

Therefore, the appropriate decision-making bodies should assume that optimum size for educational effectiveness can be determined. However, this assumption is based on two factors that must be carefully noted.

1. All size factors are <u>begun</u> at the <u>department</u> or <u>discipline</u> level and then cumulatively set for the campus by summating the optimum sizes of all programs in the institution.
2. After the overall campus size is set by summating all the programs, and after the administration and faculty have arrived at an "optimum operational range," the central

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1. Jonathan A. Gallant and John W. Prothero, <u>Science</u>, January 28, 1972, pp. 381-388.

2. <u>Ibid.</u>

administration and legislature must consider that these ranges were arrived at by ethical professionals who have considered a wide range of conditions and who are competent to make such judgments.

The optimum operational range of every campus can be arrived at using these two basic procedures. Then balanced adjustments can be made in programs by combining them or phasing them out as required. At the same time new programs can be tested at one or two campuses prior to committing the system to a new program that may prove after a period of testing to be outside the best interests of the State's system of higher education. Only when a campus has set its optimum operational range can innovation be encouraged without the present invidious process of simply adding new students in order to add new programs and vice versa.

The research has indicated that there are three general criteria by which the effects of size on a university should be judged. These are: (1) academic quality; (2) total operating expenses; and (3) human environmental and community factors. Large size per se provides neither a guarantee of academic excellence, nor economic or managerial efficiency--nor concern for human values in the community. But there does appear to be an optimum range of size between 5,000 and 15,000 that most collegians agree is best. Giant universities like giant organisms or giant cities develop the same faults as their counterparts. At what point a city becomes too large is difficult to say, but after it happens its inhabitants realize what has taken place and regret the growth.

Perhaps the exact point of dysfunction can never be set at any campus, but the research has indicated several peril points and their

indicators for a careful reexamination of campus size.

However, before considering the peril points it should be noted that up to this point the consideration of size criteria has focused on qualitative factors. The research has duly noted the need for some quantifiable points at which reasonable measurement might be possible without necessarily duplicating all aspects of the research.

To this end, the peril points ought to be considered as indicator levels and not as fixed, immutable, or discrete values. The peril points as indicator levels are not to be construed as either minimum, maximum or optimum levels; they are merely indicative of dysfunctional properties which may be overlooked in campus life unless some quantifiable level has been reached. These peril points allow a campus lead time to institute remedial or restorative action which can check increasing dysfunction.

Further, the peril points represent composite levels rather than specific points, i.e., a number of factors have been considered both from the interviews and those observations articulated in literature relative to size.

1. Physical Size--This peril point occurs when the maximum distance between major classroom buildings or other major service operations of a campus core is in excess of 1,300 yards (approximately 3/4 of a mile) or 15-minutes walking time. Urban research by Doxiadis[1] and others has indicated that distances or walking time in excess of this necessitates special transportation planning, etc. When a campus

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1. C.A. Doxiadis, "Man's Movement and His City," Science, October 18, 1968.

approaches this figure, it has reached a peril point where it must assess its physical size in terms of transportation, parking, etc. The peril point also clearly indicates that the traditional "10 minutes between classes" may not be adequate for orderly class changes. A campus whose physical size is too large can have a material affect on the quality of education.

2. Traffic and Transportation--When campus FTE enrollment requires in excess of 10-12 percent of its acreage to be allocated for parking, when major alteration to existing traffic arteries is required to provide minimum relief for incoming and outgoing traffic movements, and/or when campus and peripheral alternate transportation systems must be altered to relieve congestion, the adjustments planned to respond to enrollment numbers must be reviewed and a peril point has been reached. This peril point may be produced by poor class scheduling so that peak hour surges are created. It can also be reached by heavy FTE enrollment for a commuter campus without integrated planning between the campus and the community. The peril point can also be created by too small an allocation of acreage for the present FTE enrollment. This peril point can be alleviated if sufficient space and coordinated planning are forthcoming.

3. Utilities Demands--This peril point is reached when available central utility plants must enlarge no matter how large or small the increase may be, or separate campus substations must be constructed to accommodate increased load demands. At this point the environmental and spatial effect of these increases should be reviewed. Increased utility-load demands affect pollution, utility rates, and quality of utility service both on the campus and off. Utility companies can

show campus increases in power demands no matter how slight the fluctuations. If these fluctuations exceed the surge demand, the campus is producing a utility drain and a peril point has been reached that should be examined quickly. If the campus must have its own substation, the cost to provide power to the campus has been greatly increased and thus the peril point is reached.

4. Land-Use Patterns--Using the campus core as a perimeter, the per-acre concentration should not be allowed to exceed 40 per acre without serious reexamination. A 300-acre campus core could accommodate 12,000 full-time students without serious density problems, but a 300-acre campus with 150 full-time students per acre has a square-mile density of 96,000. This condition can create serious social pathologies. Each campus should protract its square-mile density to determine whether or not the land allocated to it is appropriate for its enrollment size. It should be noted that nearly 70 years ago (1904) Weichel drew a correlation between type of economy and density per square mile.

Density Per Square Mile[1]	Type of Economy
2,560- 5,120	Centers of small cities
5,120-12,800	Centers of moderate cities
12,800-25,600	Centers of large cities

Even though centers of large cities often have a higher density than 25,600 per square mile, a campus core that exceeds the density of even the small city has reached a peril point demanding serious reconsideration.

5. Quality Administrative Processing--When student processing lines are delayed more than 10 or 15 minutes or when the resolution

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1. H. Weichel, "Eine Volksdichte-Schichtencarte Von Sachen in Neuer Entwurfsart" Zeitschrift des K. Sachsischen Statistischen Bureaus, 50 (1904): 161-162. In its original form the above typology is more definitive than this abbreviated form.

of a problem requires more than one administrative level for the final decision, a peril point has been reached. This peril point was cited frequently both by students and administrators. Delays in decision making and inordinately long lines were cited frequently as tension points on all campuses. Long processing lines indicate either too many students, too few service people, or poor planning. In any case, a 10 to 15-minute illustrates that a peril point has been reached and serious consideration of internal administrative reorganization should be considered to speed up the time necessary to process students. The present bureaucratic structure should also be reexamined to determine if the several levels of bureaucratic decision making actually are necessary.

6. Community Absorption--When the population of the campus approaches 10 percent of the community's economic, human, or professional resources, careful reassessment should occur. From there, careful joint planning for additional growth may determine exactly how much additional growth the community can successfully absorb. Most communities can absorb an industry, increase in population, or other such function so long as it does not exceed 10 percent of the total community. The research has indicated that the communities with the greatest tension are those which have a campus that far exceeds either 10 percent of the population or 10 percent of the economy. Thus, if serious concern is given to closer cooperation and planning after this peril point is reached, a more workable condition can be established.

Again it should be stressed that these peril points ought not to be construed as establishing maximum enrollment for any or all campuses.

They are *points of reexamination* which may reveal signs of dysfunction sufficiently early to take remedial action. Delays in dealing with the conditions could start a campus into a dysfunctional state within a very short time.

Recommendations

I. In response to the directive of Assembly Concurrent Resolution 166, it is recommended that:

A. Minimum and maximum enrollment standards should be determined for each institution of higher education in terms of ranges--with (scheduled) "peril point" reexaminations;

B. Such enrollment standards should be established by the respective governing boards of each segment for each campus within that segment, with the recommendation of that campus and the endorsement of the chief executive of the segment;

C. The following criteria should be utilized in determining the minimum and maximum enrollment ranges:

1. educational programs to be provided
2. economy of scale
3. physical community, and other environmental factors that influence 1. and 2., and sound relations with the surrounding community
4. the internal organization of the institution.

D. Standards of campus size should be established as conditioned by and upon specific factors, such as:

1. the "mix" of students to be served, with "mix" representing lower division, upper division, and graduate and professional

proportions, as well as the mix of full-time, part-time, residential and commuter students

2. an internal educational and administrative organization that permits and encourages personalized education and opportunities for convenient access to educational resources
3. physical access
4. appropriate interface with the surrounding community in relation to relative size and density, as well as land use, traffic problems, and service support.

(In this context, adoption of this approach implies that campus size need not be limited if the above conditions are appropriately provided.)

II. It is further recommended that:

A. A policy decision be made by the State, with the advice of the Coordinating Council for Higher Education, as to the State's response to the projected demand for participation in higher education over the next eight years for which present facilities are greatly inadequate in all public segments;

B. The Coordinating Council's next Additional Center Study should consider in the choice of alternate responses to student demand the relative benefits as well as costs of increasing the utilization and physical capacity of present campuses as compared to the benefits and costs of constructing: (a) new campuses; (b) branches of present campuses; and (c) urban centers for present campuses;

C. The cost and benefit study of alternate responses to student need should include thorough consideration of:

(a) the social and educational effect of alternate responses;

(b) the impact on the local community concerned;

(c) effect upon access, as well as the immediate and long-term costs to students and the State; and

(d) the effects upon the system's (and other campuses in the system) long-range plans and present facilities of alternate responses.

In such consideration, it is suggested that approaches to providing facilities be explored that are different in nature and cost from historical experiences;

D. The effect of different approaches to internal organization should be examined to determine the relative value of these approaches to educational quality and efficiency of operation; and

E. The effect of designating specific campuses in each senior segment as upper-level or liberal arts-baccalaureate institutions only in Standard Metropolitan Area districts where demand is most severe should be examined.

III. It is further recommended that facility utilization formulae be reviewed by the Coordinating Council for Higher Education for its relationship to maximum enrollments, its indirect effect upon mature campuses that have achieved maximum size for an 8:00 a.m. to 5:00 p.m. day, on new campuses, and transitional campuses that are planning for future years.

APPENDIX A

INTERVIEW OUTLINES

INTERVIEW OUTLINE

RESPONSE GROUP - ADMINISTRATORS

I. What is your view on how maximum enrollments are presently established?

II. What criteria do you use in establishing these limits within your own institution?

A. In your recommendations on enrollments, what rationale do you utilize?

III. What is your view towards the present Master Plan ceiling for maximum enrollment of this institution?

A. Are you familiar enough with other institutions to comment on the feasibility of their maximum enrollments?

B. What do you consider to be the most important criteria in determining maximum size?

C. Do you feel that these criteria are being given sufficient consideration?

(1) By the Central Administration?

(2) By the Legislature?

(3) By the Coordinating Council for Higher Education?

(4) By other colleges and university personnel?

D. In what ways are they or are they not?

E. What are some organizational techniques in this or other campuses that will provide the best conditions of learning without the tension produced by crowding?

IV. Referring to the criteria you have suggested, what recommendations do you have on how they could be applied?

A. Why do you think these application techniques would be effective in your institution?

B. Do you feel these same criteria could be applied to other institutions? Why?

C. What do you feel are the most basic problems in the application of maximum size ceilings?

D. How can they be avoided?

E. When does dysfunctional growth occur:

(1) in physical plant diffusion?

(2) in over specialization of academic departments?

(3) in campus-community dissolution?

(4) in administrative over-complexity?

(5) in over-bureaucratization of both administration and academics?

V. What considerations are made by this institution to accommodate the size of this campus to the surrounding community?

A. When it becomes necessary to expand physically, what procedure is used to reduce tension or conflict with the community?

VI. What complaints have you received that can be directly attributed to size problems from:

A. Faculty?

B. Community residents?

C. Students?

D. Government Sources?

VII. California's utilization formulae (extending the instructional day) has created some misunderstandings among administrators and others. What has been, or will be the over-all long-range effect of this formulae on maximum size considerations in California higher education?

A. What has been the affect of the utilization formulae on your institution's building plans for the next decade?

B. What has been the affect of the utilization formula on your projected maximum enrollments for the next decade?

VIII. PERSONAL

(1) Age _____ (2) Sex _____ (3) Race _____

(4) Position/Rank _____

(5) Length of time at this institution _____

(6) Length of time in California education _____

INTERVIEW OUTLINE

RESPONSE GROUP - FACULTY

I. Has the size of this campus created problems for you relative to your:

A. Teaching role? How?

B. Convenience to facilities? How?

C. Relation to students? How?

D. Relation to community? How?

E. Relation to administration? How?

II. Has the total enrollment of this campus produced any problems in your relation to the community of scholars around you? How?

III. Has the size of the department/college produced any problems for you?

A. In what areas?

(1) Academically?

(2) Socially?

B. How has the enrollment magnitude of this department/college contributed to this?

C. How does this compare with other institutions in or out of California that you know about?

D. How much interaction do you have with people outside your department? Division? College?

(1) Time: Great deal _____ Moderate _____ Little _____

(2) Intensity: Great deal _____ Moderate _____ Little _____

IV. At what enrollment size do the complexities of the administration of a campus become detrimental to instruction and learning?

A. In what ways?

B. How has that affected your work as a teacher?

C. How do you think campus size (enrollment) affects the student?

V. Do you feel any degree of personal alienation directly attributable to campus size?

A. In what ways?

B. How about others that you have known? Students and colleagues?

VI. What advantages have accrued to you as a teacher directly related to size?

A. Research Opportunity?

B. Outside prestige of big university system?

C. Supportive Services?

D. Higher Salaries?

E. Increased opportunity to exchange ideas within the department?

F. At what size do these advantages accrue?

At what size do the advantages of size cease or diminish?

VII. California campuses have maximum enrollment limits set for them by the Master Plan and subsequent modification by new utilization standards.

A. Do you know the maximum enrollment for this campus? Yes ____ No ____

(1) What is it? _____

B. Do you know the criteria which were used to arrive at it?

(1) Are they valid?

C. What other criteria would you suggest to control enrollment ceilings?

D. How would you apply them?

VIII. PERSONAL

(1) Age _____ (2) Sex _____ (3) Race _____

(4) Position/Rank _____

(5) Length of time at this institution _____

(6) Length of time in California education _____

INTERVIEW OUTLINE

RESPONSE GROUP - STUDENTS

I. Has the size of this campus created problems for you relative to your:

A. Classroom performance? How?

B. Relation to faculty? How?

C. Relation to other students? How?

D. Relation to administration? How?

E. Relation to community residents? How?

F. Convenience (distance/availability) to off-campus facilities?

II. Has the size of the department/college in which you are enrolled produced any problems for you? In what areas?

A. Academically?

B. Socially?

C. How much interaction are you able to have with people in your department? Outside your department?

III. Does the size of the campus affect you in relation to:

A. Registration?

B. Class assignment?

C. Availability of courses?

D. Anything else?

IV. Do you feel any degree of personal alienation directly attributable to campus size?

A. In what ways?

B. How about others you have known? Students and Faculty?

V. What advantages have accrued to you as a student directly related to size?

A. Research opportunity?

B. Library facilities? More books and other learning resources?

C. More course options? Diversity of faculty?

D. Cultural opportunities? Extra-curricular activities?

E. Any other?

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VI. California campuses have maximum enrollment limits set for them.

A. Do you know what it is for this campus?

B. Do you know the criteria which were used to arrive at it?

(1) Are they valid?

C. What are some other criteria you would suggest to control enrollment ceilings?

D. How would you apply them?

VII. PERSONAL

(1) Age _____ (2) Sex _____ (3) Race _____

(4) Class Standing: Freshman _____

Sophomore _____

Junior _____

Senior _____

Graduate _____

Special Student _____

(5) Full-time _____ Part-time _____

(6) Length of time enrolled at this institution _____

(7) Length of time lived in California _____

INTERVIEW OUTLINE

RESPONSE GROUP - COMMUNITY RESIDENTS

I. Has the size of this campus created any problems for you?

A. Traffic? Yes _____ No _____

What are they ?

B. Housing values? Yes _____ No _____

What are they?

C. Disruption of personal life? Yes _____ No _____

What are they?

D. Political-Governmental? Yes _____ No _____

What are they?

II. How much interaction do you have with campus:

A. Students? Great Deal_____ Moderate_____ Little_____

B. Faculty? Great Deal_____ Moderate_____ Little_____

C. Administration? Great Deal_____ Moderate_____ Little_____

III. What is the nature of that interaction?

IV. Have any advantages accrued to you as a resident near the campus?

A. Economic?

B. Cultural?

C. Personal Satisfaction?

V. California campuses have maximum enrollments set for them.

A. Do you know what it is for this campus?

B. Would you estimate the number of students on this campus during the regular academic year?

C. What do you think of limiting the size of all campuses?

(1) Why do you think that?

D. What reasons should the people responsible for deciding the maximum size for campuses use:

(1) As far as you are concerned?

(2) As far as students are concerned?

(3) As far as other people in the community are concerned?

VI. Should this campus be allowed to get larger? Yes_____ No_____
Made smaller? Yes_____ No_____

A. Why?

B. How much larger/made smaller?

VII. Recently the state legislature has ordered that campuses must begin to stay open until 10:00 P.M. How will that affect you?

VIII. Do you feel your views are representative of other people in your neighborhood?

A. About the same?

B. Different in what ways?

C. Has anyone ever discussed these matters with you before? Yes____ No_____

IX. PERSONAL

(1) Age_____ (2) Sex_____ (3) Race_____

(4) Occupation _____

(5) How long have you resided at this location? _____

(6) How long have you resided in California? _____

APPENDIX B

INTERVIEW PROFILES

Appendix B

Interview Profiles

The following pages comprise summary profiles (by key questions and campus) of all structured interviews conducted through the field research phase of this study (June 10 - July 24, 1972).

Five campuses of the State University and Colleges were visited and a total of 76 interviews conducted. In addition, three University of California campuses were visited, where a total of 36 structured interviews were conducted.

Often, faculty and administrators who have served in dual capacities were interviewed, using the accounting scheme most appropriate to their major experience regardless of their present activity. For example, a faculty member who had recently returned to teaching from several years of administrative activity would be interviewed with an administrative accounting scheme; or a faculty member who had recently accepted an administrative job would be interviewed as a faculty member. The attempt always was to garner the information from the level of major experience and expertise.

This technique preserves the confidentiality of all concerned and taps expertise and informed view, rather than opinion arrived at prematurely. Further, the profiles do not necessarily reflect the informed views of any one person associated with that institution, since the profiles are grouped according to the type of answer. The actual language of the response, however, is reproduced as accurately as possible in order to preserve the intensity of the response.

For the most part, during the interviews the identity of a campus was kept from the respondents so that their answers would remain relatively open and not be subconsciously influenced by anticipated responses of others. In every case, this technique was openly explained and accepted by the respondents.

Finally, although individual campuses have been identified earlier in this study, in this section they are identified only by a letter to further preserve the confidentiality of those interviewed.

NOTE: The Interview Outlines contained in Appendix A list the questions asked of each of the Response Groups interviewed during the course of this study. The campus profiles that follow consist of summarized responses to selected questions from the Interview Outlines. In many instances, the wording of the original question has been paraphrased or abbreviated. The roman numerals in parentheses refer to the number of the question on the Interview Outline.

PROFILE: CAMPUS A

Administrators

1. View on How Maximum Enrollments are Established. (I)

   For many years enrollments have been based on the principle that "what's good for [campus X] is good for the system." The necessity to make almost year-by-year adjustments shows the fallacy of the present criteria. "We have accommodated growth, not planned for it." However controlled, enrollments must be free to vary with each campus. At present, enrollments are set externally, not internally--the right way.

2. What Criteria, Rationale are Used in Setting Limits on Campus? (II)

   Balance among the colleges, ability to grasp the needs of the community, and the extent to which support services budget will provide existing staff with necessary facilities. Try to maintain sufficient size for management efficiency. In 1963, the cost of administration was too high. If allowed to grow to 27,500 or larger, effective management becomes a problem. The need to balance effective management with efficient management is basic in setting one maximum size.

3. View Toward California Master Plan Ceiling for Your Campus. (III)

   Present level is feasible but only if internal student-program mix is maintained, with growth in health sciences and graduate programs allowed. "Large sizes may be feasible for other campuses in the system, but their size is not feasible for us."

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

   Our image is essentially our program. To change that image is to change our task. This is the over-riding factor. A close second criterion is the relation between town and gown and the impact of our size on the community. Whenever 500 students are added, one needs to ask "500 whats?" Five hundred law students added to the campus may not change the character of the total campus much. But 500 Ph.D. candidates could totally alter the campus. Is there enough physical space available to accommodate the present size and any additional growth? Further, there must be spaces available for faculty and students to congregate for discussion.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III, C)

   Nearly unanimously "no."

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III, E)

A reorganization of the curriculum to break away from the departmental major, such as the group major that cuts across colleges. This enables better learning and wider internal (campus) communication and extends learning so that the structure and purposes of campus are not threatening. A campus committee structure that utilizes students in several capacities at different levels of ability can also aid in "participatory administration." Students can function at advisory, work group, or task force (problem-solving) levels. By participating, size impact can be lessened.

7. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV, C)

Large, general campuses invariably produce large letters and science complexes, particularly if mix is ignored in reaching maximum. With a fixed limit, how do you stop old programs and start new ones? More difficult is the problem of phasing out departments. Upon reaching the limit, you must alter the basic goals of the institution, or adopt methods for maintaining image appropriate to mission, thus producing an increasingly exclusive student body. A maximum limit, once reached, stifles innovation at all levels. These problems cannot be avoided if rigid maximum limits are established.

8. When Does Dysfunction Occur? (IV, E)

Occurs invariably in a campus above 16,000 students. It may occur sooner if the administration has not carefully built in measures for reducing dysfunction. A university can be designed to be a total city (which it is), but it can also contain neighborhoods, which develop a scale of awareness, common interest, common academic elements. If a campus becomes so large that one must force interaction by means other than spontaneously acquiring it, how do you measure the cost of generating that interaction? In terms of distance, if the farthest point is more than twenty minutes leisurely walking, the campus is dysfunctional, unless you plan alternate transport systems to accommodate physical size. Further, a well-planned campus should have coffee-snack facilities within five minutes and lunch within ten minutes of the farthest point. Anything beyond that is dysfunctional.

9. Considerations: Campus to Community. (V)

Chamber of Commerce apprized each time any changes in enrollment are forthcoming. Some city council members are faculty or student or staff. One councilman assigned the job of campus-community liaison. Planning council includes members of campus and community. This was not always the case, historically, each chief administrator "went his own way." Until recently, there has been no systematic consideration of the community prior to campus expansion or change.

10. Complaints. (VI)

Faculty: Not enough space or support facilities

Community: Highway access a nuisance; taxes inflated; campus size places unrealistic demands on housing, facilities

Students: Anonymous, depersonalized, overcrowded classes

Government Sources: None

11. Effect of Current Utilization Formula on Campus Size. (VII)

This campus could add as many as 7,000 students, which is tantamount (at the lower level) to imposing a junior college on a four-year institution. Utilization is primarily concerned with lecture and classroom, but a great deal of campus life is not lecture or laboratory. Often back-to-back scheduling produces collision of several hundred students during break period of laboratory and lectures. In labs, no set-up time allowed; each must vacate at the close of the session. Ostensibly decreases need for additional building; but a campus cannot increase use and hold space constant without some dysfunction occurring.

Faculty

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

Yes. In four years, class sizes have doubled across the board. This obviously dilutes faculty effectiveness, and strains relations between deans and faculty. Faculty and administration must have basic contact with people they teach and administer. Once a campus reaches a major percentage of the total surrounding community (over 15 percent of total population), any increase can produce increased tension points with the town.

The increase in FTE has been greater than support-service allocation, which is tantamount to a staff cut-back. Impossible to communicate with other faculty when campus goes beyond 10,000.

2. Enrollment Size Which Becomes Detrimental to Campus Mission. (IV)

Above 12,000 students. [X campus] made a mistake. Originally had satellite campuses. Never believed they would reach 27,500. Easiest way to run a university is to let it grow. The hard way is to decide on program and stick to it in future. When maximum is set, what do you do with a department with all tenured, full professors? Present "policy" won't allow that, but it exists. A campus above 13,000 requires too great a geographic spread and there is great loss of easy identification, which is essential to research and learning. Courses become designed by committee. Once large size is reached, departments feel an unwillingness to innovate.

3. Advantages Accrued Because of Size. (V)

Up to a certain size (usually 12,000 to 15,000), growth is salutory. Many departments require three or more faculty each in special areas to reach critical mass. But cross-fertilization does not continue; soon it becomes specialization, which can be detrimental. Unless support services are also increased proportionately, no real benefits accrue due to size.

4. Other Criteria for Controlling Ceilings. (VII, C)

The impact on the community should be a major criterion. How is the campus balanced within the university system? The criteria must be such as to allow for an operational level. Program should control the ceiling, not the ceiling control the program, as now is the case.

In addition:

a. Faculty at upper levels must be retrained if shown to be ineffective. As much as a two year sabbatical for retraining might be considered.

b. Research at all levels must be considered as a legitimate professional function in which the state has an interest.

c. Study made to identify and award good teachers, who may not be essentially researchers.

Students

1. Problems of Size. (I-IV)

Most serious problem is access to teacher; not favorable when 100-200 students are making demands on professor's time. Virtually no contact at all with administrators--what do they do? Each department is an independent sphere of activity, not a campus wherein learning is constant. Administration has moved into "campus managerial model" and no longer is administration an activity which supports learning. Qualitative shift in all activity has occurred.

2. Advantages Accrued. (V)

Provides experimental studies, internships, wider exposure to options for personal growth, all of these can be obviated by increased competition for the programs. Should the learning experience be essentially competitive?

3. Other Criteria. (VI, C)

Impact on community people. Ultimate size is only half the problem; other half is growth rate. Every campus, large and small, should have a campus-community advisory board to assess impact of any campus policy change. There must be ecological criteria established in Master Plan. Cannot use prime agricultural or urban land needed for housing; should establish local decisions on nonpolitical reasons (may be impossible).

Community Residents

1. Has the Enrollment Size at the Campus Created Problems? What are They? (I-III)

Traffic flow problems created on arteries. Requires concern for type of controls, etc. A balanced community is nearly impossible to establish when large fluctuations occur in a campus, if that campus is a major part of the total community. Although good human resources are available from campus, city cannot be satisfied with mediocre solutions, but makes demands for higher level of service at all levels. This can be both an advantage and a disadvantage.

2. Advantages Accrued. (IV)

University provides a high level amenity to community. Produces diversity for community.

3. What Limits, Criteria do You Advise? (V)

Master Plan must recognize that essential task is one of education not management. This means the educational goals of students through appropriate curriculum. Overspecialization and education that lacks total human experience often produce "highly trained specialists who are social misfits." Size must relate to the educational point of view in campus and community in which located.

4. Effect of Current Utilization Formulae. (VI)

Creates problems of lighting and other public service elements. Sounds appealing if general community can use the facilities. Community must be able to have the whole spectrum of academic courses available if full utilization is expected.

PROFILE: CAMPUS B

Administrators

1. View on How Maximum Enrollments are Established. (I)

Campus much too big. Major part of educational process is the human task. This cannot be accomplished for a large percentage of the present student body. No campus of over 5,000 students can accomplish this humanizing function. Present policy is a fighting game between increased FTE and decreased faculty and services. Quality education cannot be achieved with present facilities. When more faculty and services are dependent on increased enrollment rather than changes in program needs one cannot plan for quality education only quantity education.

2. What Criteria, Rationale are Used in Setting Limits on Your Campus? (II)

What do we need to do the educational job? If slight errors in prediction are made, we must add students to catch up, which perpetuates the problem. What will the physical facilities support; can present faculty positions meet the new demand? In an industrial arts program, safety must be considered--some rooms may accommodate 35 according to audit--but more importantly what number is the program safe to operate at. (Excess use by increased enrollments produces premature equipment fatigue--but no mechanisms exist to ammortize equipment. No basis for equipment replacement.) A faculty member should feel secure so he can concentrate on courses. Present attitude, "What are the legislature and the Department of Finance going to do next to interfere with the professional task I'm supposed to accomplish?"

3. View Toward California Master Plan Ceiling for Your Campus. (III)

Much too high. On this and other campuses 30,000 FTE would be over 40,000 bodies. The turnover between classes with those numbers is brutal. Further, labs cannot be serviced.

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

First of all, campuses should have some limit set on size. But before this figure is arrived at the sub-components of the campus should be identified and assessed; minimum for each discipline then set; and, finally, all these programs added together to give a size figure. This means a total single size for each institution should not be set; to do so is to operate from the wrong core. The most important concern of every campus should be the development of human characteristics, how to live beneficially with others. Large size is wasted human effort because it places campus groups at cross-purposes with each other. The tension put on these groups becomes destructive. Quality of education, so students can gain most out of instructional enterprise.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III,

   Nearly unanimously "no."

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III,E)

   Modify buildings to include center of study with leisure area for identification with other students and faculty. Develop a significant social climate to enhance out-of-class learning. Buildings should have small units in them for "security of closed place." Small intimate spaces. Develop "departmental or discipline association;" both student affairs and academic plans formed out of department levels are far stronger overall. Set departmental quotas realistically. Restructure so students have an identification point. Create a cluster-college concept organization within present facilities of university. "Buildings are getting closer but people are getting farther apart." Use Psychologists and sociologists on campus to aid in assessing the impact of size on the process of depersonalization.

7. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV, C)

   Difficulty of sharing innovative practice in administration or discipline. Topping out prior to development of needed programs. A formula-lock is bad planning. An inflexible ceiling, like an inflexible utilization formula, destroys advantages of previous growth. Plateaus eliminate new programs unless something else is sacrificed. Cannot meet new technology. Previous planning allowed uni-purpose buildings to be built; these buildings cannot be converted to "learning centers." In a sense, rigid ceilings have the same effect.

8. When Does Dysfunction Occur? (IV, E)

   In this case, dysfunction occurred at the outset. For example, the school was planned in an urban community in 1949 with virtually no provisions for automobile traffic. When the sense of community begins to be lost at the departmental level: e.g., trouble making decisions about who is chairman; increasing number of grievances about other faculty. Happened in 1964 with large influx of students and the facilities could not handle them. Could not assimilate the faculty. In 1968, had to reorganize, and from the sheer weight of numbers the institutional character was changed.

9. Considerations: Campus to Community. (V)

   No real considerations; some parking problems.

10. Complaints. (VI)

    Faculty: Too many students

Community: Parking

Students: Cannot get classes; parking; complaints becoming academic, but mostly "I was shifted from one bureaucracy to another to solve my problem."

Governing Sources: None

11. Effect of Current Utilization Formula on Campus Size. (VII)

Underuse is detrimental to tax-payer, overuse is detrimental to student; a balanced utilization to a fixed formula may be impossible. Cheats the student out of full use of facilities--to accommodate only a specific use. It will affect both physical and academic planning. Cannot build on projection but only on utilization, which is after the fact. Utilization formula is a smoke screen to say no to projected needs and growth. In a sense, faculty have no professional privacy.

Faculty

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

Yes. Size always necessitates a change in course presentation, which may not be more effective teaching technique. Size produces department and college fragmentation. Faculty moved from pride to futility as numbers become overwhelming.

2. Enrollment Size Which Becomes Detrimental to Campus Mission. (IV)

At 10,000 students--point at which duplication becomes detrimental to accommodate numbers. At 15,000 students, departments could no longer see their function in relation to institution. "Began to paddle their own canoes." As departments and faculty "go their own way" students feel the impact. From stubbornness against the system, he moves to antagonism, then to outright hostility and revolt.

3. Advantages Accrued Because of Size. (V)

No advantages that have not been obviated by counter-productive disadvantages due to the same phenomenon.

4. Other Criteria for Controlling Ceilings. (VII)

Physical size and space limitations of total campus by density rather than total number. System should consider speciality programs, not sheer total numbers as criteria. Job placement and need in market place. Classroom and department size should be starting size. Assign specialization to some campuses. Effect on outside community; is the size appropriate to the rest of community? Need attitudinal support

of community as well as basic needs (food, shelter), need attitudinal support of statewide influence.

In addition, there may not be a failure to communicate, but a "mountain of communications," which makes a single item insignificant.

Students

1. Problems of Size. (I-IV)

Hinders self-expression or questioning of principles. Always in competition with other students for the professor's time. As class size goes down relation with faculty goes up. A sense of co-jointness in the educational task makes you feel you belong to the department. System of registration is efficient but a hassle. Minority students want their numbers to increase--"so we can get all we can."

2. Advantages Accrued. (V)

More available classes, even though they fill up fast. Varieties of personalities available to students. More student personnel services. Speakers programs, drama, coffee houses, but library only barely adequate.

3. Other Criteria. (VI, C)

What is the population of immediate area for a 30-mile radius--can this campus serve that population? What is the economic level of that area, are there sufficient programs to meet the need presented by that condition? Physical size and facilities. If faculty and administration have a good relationship this will be transmitted to the students.

Community Residents

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

Campus master planned for 5, 10, 20, 30 thousand. Each change produced traffic and attendant problems. Campus domiciled in a fully developed community. At 5,000 and 10,000 levels, instructional centers placed at one point; parking at another created serious problems when campus went to 20,000 and above. Since the time when campus originally located--not one street changed nor one house removed. Campus surrounded by private ownership; pride of ownership is expressed. Too many students can attack that.

2. Advantages Accrued. (IV)

Some communities merely take a campus as it would any other industry. But, there comes a time when the area cannot accommodate additional growth. This campus is close to that point.

3. What Limits, Criteria do You Advise? (V)

Span of control must be determined. Present system does not allow spans of control, e.g., on some campuses Dean of Letters and Science is responsible for 14,000 students and 550 faculty. This is an unrealistic span of control; must be different than a dean of engineering with 550 students and 49 faculty. Can factor accounts receivable, but cannot factor human beings. Size must be correlated with accessories. Education requires some merchandizing, but one public relations officer cannot merchandise the total product of a large campus.

PROFILE: CAMPUS C

Administrators-Faculty

1. View on How Maximum Enrollments are Established. (I)

   Essentially a target based on the conceptions of a "multiversity"--Clark Kerr's successful attempt to keep each campus, or more especially (Berkeley, UCLA, and San Diego), from becoming a 40,000-student monster that the Regents and others were leading University of California toward.

2. What Criteria, Rationale are Used in Setting Limits on Your Campus? (II)

   Traditional criteria that is a mixture of students and program needs. Recognize that best universities are rather small: Stanford, Harvard, University of Chicago, etc. Try to avoid growth in exchange for interinstitutional cooperation.

3. View Toward California Master Plan Ceiling for Your Campus. (III)

   In a word--"absurd." No matter how successful the experiment, size can destroy the program. Further, some towns cannot accommodate 27,500 students, nor even 20,000. Every campus must concern itself with the result of placing 20,000 or more 18 to 22 year-old people in a concentrated area. It is obvious that institutional size affects values. An open university is a far better alternative to a large university.

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

   Balance between economies of scale and development of quality overall in the institution. Must be large enough to provide varied program, but in an environment that encourages learning. That the campus and the host community are compatible. The campus size should not be overbearing to community.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III, C)

   Very little; have not aided in the solution of the problem of size.

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III, E)

   Move toward more individualized instruction, insist that senior level instructors teach at freshman level. Utilize cluster college, diversify after-hours facilities. Provide effective transportation for release from campus tension.

7. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV, C)

"Dollar people" are not attuned to the program. Fixed faculty-student ratio often does not do justice to individual program variation. Budget offices feel faculty are loafing, but professional staff know the limits to which good teaching can go. The function of a university must be able to defeat the pressure of impersonality in other aspects of life. If size is too large then university becomes impersonal; it should be the most personal experience.

8. When Does Dysfunction Occur? (IV, E)

First of all, dysfunction need not occur if funds for support service keep up with growth. Dysfunction occurs when faculty-student ratio is raised but support services are not; at that time the "educational experience" becomes a commodity. Usually occurs at above 10,000 students. Often the undergraduate student is sacrificed for the graduate student. Once dysfunction starts, departmental structure speeds up the process. The larger the size, the more structured the department gets.

9. Considerations: Campus to Community. (V)

Retained consultant firm to study housing. Environs coordinated with city people. It is not enough to have chief administrator and town heads "work out the problem--" neither necessarily represents the proper community structure. A committee which works regularly with the Chamber of Commerce or another agency is often a better choice. Although not necessarily a matter of campus size, the community holds the university responsible for student behavior.

10. Complaints. (VI)

Faculty: Not enough time to perform advising capacity as expected.

Community: Not consulted enough when changes are made.

Students: Not enough close attention paid to the work of the student.

11. Effect of Current Utilization Formula on Campus Size. (VII)

Utilization is presently high. This can be an internal prod for faculty. But class size, etc., can be detrimental when minimum limits are set. Campus does not qualify for a swimming pool or performing arts program; have to grow to get such facilities.

The governance mechanisms and resource allocations have to be realistically matched with campus goals. Size must be organized in another way besides total number of students--better how distributed; is it reasonable and fairly efficient to do the educational job?

Community Residents

1. Has the Enrollment Size at the Campus Created Problems? What are They? (I-III)

   No serious problems created by size. Community plan based on maximum number of students with a balanced campus. Large pitch made to involve development of industry. "Out went a key program--moved to something less than a general program; an industry was advised not to locate in here because of student hostility." Student body and faculty not conducive to business climate.

2. Advantages Accrued. (IV)

   General advantages to having campus: building trades prosper, increased spending. In 1959, provided with an assured projection. (Obviated by changed ceilings--don't want the number students of the kind now present.) Stimulation to theatre, art, symphony.

3. What Limits, Criteria do You Advise? (V)

   Not so much the total size but the community-academic mix. Campuses worry about proper internal mix--grad.; lower division; liberal arts, profesisonal, etc., why not an external mix as well? When the student body differs dramatically from community, trouble is invited. Rate of growth should be slower.

4. Effect of Current Utilization Formula. (VII)

   No effect; community doesn't use the facilities.

   In addition: Chamber of Commerce no longer happy university is here. May develop a modus vivendi but little relationship of a positive character.

PROFILE: CAMPUS D

Administrators

1. View on How Maximum Enrollments are Established. (I)

   Unintelligently! Physical limitations have dictated size, while the social aspects have not been given sufficient consideration. Need to change maximum sizes. Campus unrest has shown need for campus size reconsideration on new bases that include personal and social factors. The system criteria include an assumption that larger institutions afford an economy of scale; that is highly questionable. No one has ever demonstrated categorically at a cost-benefit level this oft-assumed position.

   Maximum sizes originally were based on a dialogue between central administration and campus, but the rules were changed with admission standards, utilization formulae, summer sessions, etc. All of these decisions were decided without full campus input. This, coupled with no extension of budget support, has produced an almost intolerable situation. Since 1968 budgeting of supplementary services has been systematically eroded.

2. What Criteria, Rationale are Used in Setting Limits on Your Campus? (II)

   First, the academic program and the competency of the faculty. No campus should be all things to all people. Problem arises when more and more people and programs are added without supporting fully the present ones.

3. View Toward California Master Plan Ceiling for Your Campus. (III)

   Campus should not get bigger. Absolutely no value can be shown to adding more students. There is a fundamental flaw in the system. F.T.E. makes wrong assumptions on number of credit hours students actually take. Secondly, the market research of student population is terribly unsophisticated. No one actually knows that one campus can meet the projected needs better than another. Without this information establishing actual size limits, utilization formula, prior to building new campuses is all but worthless. Ten years ago the Master Plan led the surrounding community to believe that in a short time all the land would be purchased. The last parcel was bought this year. A large campus is a 24-hour operation and is not a prestige neighbor, as originally felt. Quality of education--that is, the ability of the student to have personal interaction with other students as well as faculty; and for faculty to have personal interaction with themselves.

4. Are the Criteria Which Should be Utilized Actually Used in Planning? (III,C)

Philosophically, some concern evidenced, but rarely in practical implementation. The lack of power of the Coordinating Council is partly responsible for the educational and social criteria not receiving adequate attention. The only segment in higher education fully appreciative of size is the private sector. In addition, the state has assigned research to the university which is unprofessional. No teacher can long endure without research. As a great scholar once said, "Research is to teaching like sin is to the confession. Without the first you don't have anything to say in the other."

5. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III,E)

Ancillary services such as faculty offices, departmental offices, student services, and all university functions need to be kept open as long as classes are going on. In addition, a good policy is based on decentralized food services, student services, and administrative services.

Dialogue with students, administration leadership. Participatory scholarships for students who work on committees. Cluster college a good alternative. Large urban campuses are handicapped, but still some modified cluster plan can be accomplished.

Special-funded advising programs that would bring a student into a full effective advisement relation at many stages. A centrally located facility manned fully through the total instructional day, headed by a prestigious person on campus, with a full staff. No budget provision to expand this kind of service without added F.T.E. defeats the entire purpose.

6. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV,C)

Increased faculty-student ratio makes the sheer magnitude of the size produce a highly bureaucratized system. Restricts new programs and cuts off innovation. After maximum size reached, how to respond to needs--a new program means abolish an old. Biggest problem is systemic. What is more important, one campus's library or another campus's road system. Not compatible needs, but each vital to the campus program.

7. When Does Dysfunction Occur? (IV,E)

Some dysfunction can be avoided by single-minded administrations--both campus and system; faculty should set academic policy and the administrators administer. Dysfunction can occur at any size when support staff and services are not provided. The cluster college insures adequate support staff in its units. Theoretically,

Santa Cruz could be 100,000, but at some point someone will say, "You've got too many secretaries". Then the process of cutting support staff will occur. Basically, dysfunction is a support factor, not a size factor. Higher education has always been partly dysfunctional; growth has always exceeded financial facilities. Given adequate support facilities and complete organizational flexibility, dysfunction need not occur at any size.

8. Considerations: Campus to Community.(V)

Initially none. This campus did not grow with the community.

9. Complaints. (VI)

Parking, traffic flow. Too many people in faculty offices. Too many people in classes. Campus accessibility; everyone drives. Faculty feel they do not have full enough role in the philosophy of instruction because they are forced to add more students.

10. Effect of Current Utilization Formula on Campus Size. (VII)

Tyranny of the audits forces surreptitious use rather than open use. For example, a classroom may be scheduled for use at a given day and time. Auditor visits, classroom not being used. May be a sound educational reason for not using the room, e.g., field trip, outdoor class, observation of some activity, etc. Audit often not concerned with educational reason; it is not an audit but an inappropriate police power.

Faculty

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

Two inflexion points occur, one at lower level one at upper level. There is benefit in larger classes so students can interact. Large size contributes to discomfort both by students and faculty. As campus gets larger, ordinary faculty person doesn't feel a dedication to the institution. The larger a campus gets the more likely one conceives of his profession as just a job. A system that loses touch with grass-roots or doesn't know what the grass roots are doing is doomed to impersonality and ineffective management. Easier to lose teaching image as a full personalized experience on a large campus than on a small one. This is certainly a function of size.

2. Enrollment Size Which Becomes Detrimental to Campus Mission. (IV)

This is not a sharp division but a range. One big error in instruction philosophy is the assumption that a lecture is different. A lecture is not much different than a lab. But no one is really pushing for larger and larger labs. It's not so much the overall campus size, but the size of the class that is really important.

3. Advantages Accrued Because of Size. (V)

   Wider Curriculum, allowing professors better opportunities to teach more courses.

4. Other Criteria for Controlling Ceilings. (VII,C)

   First, must ask what is the ideal teaching situation trying to achieve. Then in order to preserve some economy, determine how far you can back away from the ideal and still give a quality education.

Students

1. Problems of Size. (I-IV)

   Often the popular teacher can't be reached. Sheer numbers makes it impossible. No student housing near campus.

2. Advantages Accrued. (V)

   No real advantages. Some opportunity for more service programs such as EPIC.

3. Other Criteria. (VI,C)

   If entire system adopted a totally open enrollment then you could determine who would want an education. No matter what the admission requirements, there is a discriminatory factor. Once you determined who really wanted an education, then you could build accordingly. At present, no one knows how many young people would go if they could. Draft was the main reason for going to college. Notice drop in enrollments. But still have not ascertained who really would go.

PROFILE: CAMPUS E

Administrators-Faculty

Note: Several interviews with administrative and faculty personnel with administrative responsibilities have been combined in this section.

1. View on How Maximum Enrollments are Established. (I)

   Basically determined by state financial considerations. Trustees and Regents feel, "what can the campus handle in numbers" is an important consideration; this easily can take precedence over program considerations. Current enrollment figure is poor even as a planning figure, since this campus has moved through several ceilings. California boasts that every high school graduate can go past the high school education--there may be too many youths to guarantee a quality education for all of them.

2. What Criteria, Rationale are Used in Setting Limits on Your Campus? (II)

   Nature of the community and the ability to serve it. The density of the population over an immediate area (approximately 30- to 40-mile radius). What are the unique institutional characteristics that attract students from this area and from the wider area than this immediate area? How many students can we manage? How effective, formalized, are the management and communication processes?

3. View Toward California Master Plan Ceiling for Your Campus. (III)

   Much too high for space limitations and program excellence. Size has become dysfunctional at several levels (administrative, faculty, student affairs). Berkeley is too big also. Cannot redirect students who enroll here to go to other institutions. Average age of our student is 26. Further, he is almost invariably married and employed. In a way these other ceilings are unrealistic unless redirecting of students is easily accomplished.

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

   Universities usually develop a mission in reference to the community. This mission must be uppermost in fixing size. For example, suppose the School of Education is reduced 10 percent in teacher education function (in terms of total personnel and fiscal budget) because of reduction in teacher manpower needs. That decision assumes that the only function of the School of Education is to crank out new teachers. However, the total university has made heavy incursions in all phases of education, not just teacher training. Thus, cuts of this type do not consider the university's total mission. All maximum sizes should start with fundamental goals of this university, compared to others that are similar, statewide and nationally. Next, an analysis of the students and community served should be balanced to see if

those goals reflect those needs. University must be responsive to articulated community needs. But not only the goals; in addition, the society's ability to absorb the output must be assessed. Ceilings must be set, not to control all phases of the program but to balance the program, not force people to take certain classes at certain times. There is a good possibility that the factor of size alone dictates program. Campuses must now change their philosophy of education to accommodate the increased maximum enrollments. Rapid ceiling changes throw a campus into imbalance.

A campus must be free to develop organizationally any way it can to accommodate its size. A state college or university should be able to shift organizationally to a cluster college concept if that is deemed feasible to accomplish its educational task. Present allocations for departments encourage large departments. Any academic discipline that reaches thirty members begins to show some cleavage that suggests reorganization possibilities. Community of scholars and students can be fostered in large departments by area studies, tutorials, by stressing learning experience rather than subject matter.

Space limitations are often most important and should be considered. Present physical units not enough for present size. Campus does not provide enough open area to handle present size. To expand outward is not feasible, since land costs often obviate that in the immediately adjacent area around an urban campus. Physical facilities must be matched to enrollment ceiling.

> "If the nature of knowledge is the mere possession of information then huge size (over 30,000 F.T.E.) is irrelevant. But faculty and administration basically are committed to the principle that knowledge = performance = values. That is, the knowledge received can be measured by performance and the performance reflects the values learned and experienced and in a sense the values are knowledge. Thus the ends and the means of a university are the same, or virtually inseparable. A student needs to grasp not just the facts but the intellectual undertone. The only method man has (barring E.S.P.) is personal interaction. The entire curriculum of every university is based on this fundamental principle. That is the nature of the academy--personal interaction to provide knowledge. But the academy becomes lost in large size. If 30,000 student bodies, 3,000 staff support personnel and 1,400 faculty all jammed into this campus, it would have an approximate density of 15,000 people per square mile. With that density the "sense of community is lost to the sense of survival."

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III,C)

   No. For example, we have a specialized program; it is one of the only institutions that has such a program. Seventy-six community colleges are feeders to this program. It is obvious that this campus' instructional program will be materially affected by sheer weight of numbers.

   Often the Legislature is forced to act because no one else does. But often they expect campuses to carry programs without adequate support, to experiment with new techniques.

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III,E)

   1. Role of the chief administrator has to shift from management decision maker to an integrator and goal setter. The chief executive of each campus must be free in time to relate to the people around him. This means changes in management structure to work against the ill effects of size.

   2. As an institution gets larger, the institution must be free to produce meaningful communities within it. The cluster college is one way. Reconstituting departments and divisions is another. Constant goals conferences to share throughout the system the diverse goals. These goals and procedures should be periodically assessed systemwide.

   3. Adoption of the tutorial model may also aid in maintaining collegial atmosphere.

7. What are some of the Basic Problems in the Application of Campus Size Ceiling? (IV, C)

   1. Physical limitations; support does not expand to anticipate increased enrollment.

   2. No one on a large campus (more than 12,000) has a full grasp of everything that transpires on the campus.

   3. As campuses grow larger they become more like factories. It is a myth that every person deserves a college education.

   4. When a system gets large (and the campuses are the components), auditing procedures become mechanical. Thus, in faculty staffing formulae, the formulae obviously generate new faculty. This then is an auditing procedure that not only allocates faculty but also defines faculty. That is, colleges are audited by an instrument not designed to allocate or define faculty, but that is exactly what is happening.

5. The only way to get support is to grow. A support system based on the generation of new F.T.E.s is bound to produce size problems that cannot be easily dealt with.

6. One formula encourages growth (allocation based on F T.E.), but buildings must have maximum utilization. Once a building is built, the function may be restricted.

There are some possibilities to alleviate, such as providing alternatives to higher education, diverting to other institutions, and becoming more elitist in the state universities. All of these would require basic changes in the public policy.

8. When Does Dysfunction Occur? (IV,E)

In physical plant, when density must be adjusted up, rather than allowing diffusion. Departments begin to show complex sub-options to simple major-minor choices. As campus gets larger, the bank of communication narrows. Each administrator tends to deal with fewer administrators. Can best be seen in general lack of toleration of mistakes. Thus, decisions are not made because mistakes are feared. When function changes from educative to custodial (e.g., E.O.P., special admission quotas), the change of the character in the student body occurs. Open admission makes state colleges therapeutic. Selective admission would allow other state agencies to be therapeutic. A campus above 12,000 students begins to develop intra-systems. The need to develop systems within a system to accommodate increasing size can quickly become dysfunctional.

9. Considerations: Campus to Community. (V)

Advisory council of this campus helps to maintain some relationship. Campus cannot expand physically at present location. Never did an adequate public relations job. Parking facility building caused substantial animosity.

10. Complaints. (VI)

Faculty and students primarily focused around registration procedures. Students often not aware that certain services exist. Also, the campus ignores the community. In a sense, faculty argue that "the chancellor and the president are myths." Most interaction with the president or chancellor is impersonal. The community people feel they are being jammed in by student cars. Some complaints from city government when class schedule changes. Brought cars into a congested area at rush hour. Result was traumatic. Lasted one year. Now back to old schedule. Some serious problems occurred when street closing was proposed. Took ten years to get street closed. Community blamed university when fraternity system died and the large frat houses were converted to social agencies, etc. Generally, students and faculty feel impersonal and by-passed.

11. Effect of Current Utilization Formula on Campus Size. (VII)

Makes it difficult to plan programs. Students can't clear course requirements with present night schedule. Factor that forced this formula was a size factor not a quality factor. One benefit was that it slowed down rush to construct new buildings. Gave time to think through more carefully the long range need for each building. Can open building, can schedule faculty, but not students. Logic says they should take the course, but not always the case. State Department of Finance has never allowed colleges to get ahead of the F.T.E. capacity. How to vacate a 3,200 F.T.E. classroom building to remodel for new program. University of Wisconsin has 30,000 students and 3,000 acres. In 1980 we are planned to reach nearly that many students or more, but on considerably less land. Even specialized programs off campus mean sooner or later even those students must come to central campus.

Students

1. Problems of Size. (I-IV)

The ten minute interval is not adequate for long distance class change. Seating arrangements used in larger classes. Traffic problems and parking. Labs have too many students and not enough equipment. In one electronics lab the equipment was not available for any length of time. Night classes are filled to capacity; often, resident students can't enroll in them. All phases of campus interaction more and more impersonal. No individual attention possible in most classes. Faculty office hours cannot be set realistically when responsible for 160 or more students. Academic advising is rubber stamping. Often a freshman will complete a whole year with no interaction on an intellectual level with his instructors. Student often does not realize he is flunking. Becomes anonymous, cuts class, flunks--all very frequently a function of size.

2. Advantages Accrued. (V)

Some broader-based opportunities but invariably mitigated by other impersonal factors due to size, such as increased use by many students.

3. Other Criteria. (VI)

1. Commuter campuses with heavy traffic add to air and sound pollution. This factor should be a researched criterion.

2. Student-teacher ratio in all classes should be 25-1 at undergraduate and 12-1 at graduate level to insure personal interaction in all classes.

3. Every student should be able to have individual attention academically without feeling he is depriving some people from the same service.

4. All ceilings must be careful not to deprive minority students of an equal opportunity. The indigenous community must be served first and then further out to other state environs and other countries.

PROFILE: CAMPUS F

Administrators

1. View on How Maximum Enrollments are Established. (I)

   A decision based essentially on population and political considerations.

2. What Criteria, Rationale are Used in Setting Limits on Your Campus? (II)

   Basically committed to the Master Plan maximum, but the question was really how soon would it be reached. 1969-70 produced a dramatic shift in the student body. Changing nature became more political and social. Had image of career mindedness with parents, not having any serious unrest, thus popular with community and parents. Were basically able to maintain program balance; heavily weighted toward technical and career.

3. View Toward California Master Plan Ceiling for Your Campus. (III)

   Unless we can maintain dominance in technical, we will lose uniqueness and destroy its purpose.

4. Most Important Criteria Which Should be Used to Set Size. (III,B)

   Program balance, which is designed not to produce a general campus but reflect the technical career balance, presently being maintained.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III,C)

   Central administration has stated publicly that it accepts the present emphasis. But constant pressure to admit new students, to grow. A system-wide standard of admissions cannot be applied to noncomparable situations.

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III,E)

   Develop satellite campuses, cluster colleges. But these are not appropriate at this institution. Most students locked into major. A campus that historically has opposed the basic liberal arts program in favor of technological and engineering emphasis cannot use generalized size criteria nor organizational techniques that favor liberal arts experience.

7. What Are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV,C)

   First, getting the maximum size accepted by the people involved. Maximum size cannot be rigid, must have flexibility to include moderate, planned decreases as well as planned increases. New technologies produce pressure for overall reconsiderations.

8. When Does Dysfunction Occur? (IV,E)

   Occurs when program goals must be adjusted to accommodate new enrollment. Begins at department level and is transmitted all along the line.

9. Considerations: Campus to Community. (V)

   Some direct cooperative involvement individually. Support efforts of faculty and students to involve themselves in social, political affairs of the community.

10. Complaints. (VI)

    Faculty: Insufficient support services.

    Community: No consistent planning for size fluctuations so that problems can be addressed.

    Students: Not enough emphasis on human-scale subjects; also not enough emphasis on technology for those who wish to avoid these subjects.

11. Effect of Current Utilization Formula on Campus Size. (VII)

    Night utilization for a predominantly resident campus creates use by forcing students and faculty rather than by utilization which is a response to community needs.

    In addition: a system that provides same dollars for an English major as well as a physics major is totally unrealistic. Resource determination should be by program or by discipline for both operating expenses and equipment purchase. Fixed-equipment replacement allocation per F.T.E. is not realistic for a high percentage lab institution. Adding majors in low-cost programs changes institutional character.

Faculty

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

   Time to administer is out of proportion with teaching load. This time spent outside class is not factored back into the formula for resource allocation, which will constantly produce a shortage of resources.

Growth produces a condition in which students do not know to whom to go. Cannot keep authority lines and communication lines completely open once a campus exceeds 10,000 students. In some cases, a ten-hour day has nine hours of lab scheduled; no reflection time, breakage increases, physical damage arises. Administrators are more distant. For example, a faculty member of two years did not know the dean of students. Many decisions that go through senate process could have been handled earlier (smaller size) over a cup of coffee. Teaching simply cannot occur in mass lecture sections. Often small gripes are symptomatic of deeper more serious frustrations and impotencies in faculty which will be reflected in teaching. Many faculty now actively engaged in unionizing efforts, were only two years ago opposed. Have become radicalized by pressures from nonprogram-sensitive auditors.

2. Enrollment Size Which Becomes Detrimental to Campus Mission. (IV)

   Detrimental effect occurs somewhere around 8- or 9,000 students. Above this point, committee proliferation occurs. Other work cuts into preparation time. Faculty begin to spend time on administrative forms. Justifications are required for all budget requests, but only professor teaching class can write up the justification. The student gets less and less of the faculty member's time. Constant pressure does not allow faculty to take a positive position on size, forced to react negatively.

3. Advantages Accrued Because of Size. (V)

   Some program development, but almost always destroyed by additional restraints. Therefore there are no real, unrestricted advantages.

4. Other Criteria for Controlling Ceilings. (VII,C)

   Present class-size criteria have nothing to do with teaching, but are based on number fire marshals let them put in a room or building.

   Departments should be allowed to set ceilings and then make physical plant accommodate to that size, now the reverse is true. Walls and ceilings should not control the learning function within them.

   It is as irrational to close out a class with seven students because fourteen is the minimum, as it is to set the minimum in the first place, especially when these sizes are set outside the department. At the point no longer gaining efficiency, campus is too big. Faculty isolation produces low-morale problem, especially when inadequate office space is the factor. Growth should not exceed ability to appropriately house faculty.

Students

1. Problems of Size. (I-IV)

   Size pressures do not recognize that learning occurs outside of class. Size makes for education to be a cog in a machine rather than a rational being. Administrators are distant, faculty become inaccessible. Pulse of students is changing rapidly. Depersonalization is in a direct line ratio with increasing size. When campus gets too big it develops a "competition ethic" detrimental to true learning. Registration and courses to fit person are increasingly difficult.

2. Advantages Accrued. (V)

   No real advantages. As size produces pressures the good faculty go. The ones who essentially can compromise good teaching often stay.

3. Other Criteria. (VI,C)

   Because much teaching today is nothing more than an exchange of facts and not a thinking process, increases in size can be accommodated with little apparent damage. The long-range impact of the idea that sees the thinking process as factual accretion will be enormous. The only size criterion should be, "The slightest compromise to the thinking process (in the best Socratic image) cannot be tolerated."

Community Residents

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

   It is irrational and totally unrealistic to think that a campus can double or triple its size and still be the same. It is not always character that determines size, but size that determines character. Affluent society has allowed thousands of youth to gravitate toward more beautiful campuses or to more strategically located campuses for a kind of "new recreation." Just as Carmel attracts people who have an affluent inquisitive attitude, so campuses attract the inquiring youth. But campuses are not meeting this challenge with merchandising techniques. "Come and see what we have to offer" may be the device that offsets violence and destruction. Traffic and housing are perennial problems that can be met easily with minimum community upset, if campus maintains size and plans accordingly. Campuses must be annexed where they stand outside the corporate entity adjacent to it; otherwise, they are never a total part of the community. Just as there is an economy of scale, so there is a "learning of scale." An "A" grade without learning is not education and intolerable. Size and impersonality allow this to exist.

2. Advantages Accrued. (IV)

Obviously increased city income and benefits from professional expertise. Students get involved in city council hearings and then community residents get involved. Community is more vibrant and sensitive to issues. Entertainment and athletics a postive value to community.

Fifteen to twenty years ago a home was hard to sell. Now very easy to sell, but price is going up more than real value of property.

3. What Limits, Criteria do you Advise? (V)

Before fixing size, community analysis should be accomplished. Not an overwhelming task, but necessary if size is proportional to community--absorption ability. Campuses that do not involve community are the same as large scale absentee ownership to a community. Without campus and system concern for community problems, can never mesh the educational task with the affairs of the community, region, or state.

4. Effect of Current Utilization Formulae. (VII)

Rural communities are oriented toward the eight-to-five day. Businesses only stay open one night a week. A campus open till 10 p.m. is ridiculous in a rural area. Merely another aspect of systemwide lack of understanding of the local community.

PROFILE: CAMPUS G

Administrators-Faculty

1. View on How Maximum Enrollments are Established. (I)

   Basically an arbitrary decision, which often does not consider the character of a campus as a regional or national university.

2. What Criteria, Rationale are Used in Setting Limits on Campus? (II)

   Consult with departments. How many faculty can they handle? What are the population projections in each section? How many applicants for each department? Then a reasonable assessment of the profession or discipline status. Is it at a crest, rising or subsiding? In working committee exhaust viewpoints of students, faculty, etc. Then decide if program should or can be expanded and what is required. Determine if learning is becoming more or less effective, adjust size accordingly.

3. View Toward California Master Plan Ceiling for Your Campuses. (III)

   When you once reach fifteen thousand students, another five thousand will not make much difference. But once you pass twenty-five thousand a great loss occurs. No precise point exists at which this loss occurs, but present size is too large. Faculty cannot handle the constant pressure of continuing education such as "stop-out," this interruption is not conducive to strong graduate study. Inconceivable that a university be both small and diversified.

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

   Distribution across the state and the needs of program offered. That a large university must be the place where questions are asked and new techniques are used for their answers. This requires large enough size and diversity. However, cannot be so large that it is forced to use mass-educational techniques in place of other experimental techniques.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III, C)

   Emphatically "no."

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III, E)

   Develop a broad learning base in the department. Produce a "people campus" to accept higher density, but use every known device to preserve low density. In modern planning, you can accommodate crowding, by allowing frequent "free-spaces." Allow support funds to be slightly over actual enrollment. A master plan cannot accommodate year to year student swing.

7. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV, C)

   When a limit is set, it must be arbitrary. As long as campus below the limit, no problem. Once campus reaches maximum size must of necessity alter the subsequent planning. Many limits were set some years ago; they were reasonable figures then, while everyone was below; did not contain consideration of an order of magnitude of quality. Is 27,500 really better than 25,000; if so, in what ways? Main problem is an absolute limit in a given space. An expanding economy has fewer problems than a static industry.

8. When Does Dysfunction Occur? (IV, E)

   Occurs first at the departmental level. Begins with such things as amalgamation into larger, often gargantuan, departments or divisions. Occurs when distance and time required to go from place to place exceeds 15-20 minutes.

9. Considerations: Campus to Community. (V)

   Very little.

10. Complaints. (VI)

    Faculty: Insufficient support services

    Community: Not enough faculty concern for community problems

    Students: Must turn qualified students away, but allow dissidents to enter

    Government sources: Alters tax base of city economy

11. Effect of Current Utilization Formula on Campus Size. (VII)

    A roadblock to ascertaining what it is we want to teach, and conditions under which best learning occurs. The extended university is the key to utilization.

Students

1. Problems of Size. (I-IV)

   Generally one comes to a large university expecting size problems: class assignments, etc. For the most part depends on the maturity of the student.

2. Advantages Accrued. (V)

   Prestige and graduate-study capability. Often benefits are not real. Cultural opportunities, but poor students (foreign and American) cannot afford the cost.

3. Other Criteria. (VI, C)

Admission standards should be less rigid than retention standards; but retention standards should get more severe each semester. Weeding out should be slow not sharp, traumatic process. Some credit should be given for effort. Rather than a student receiving an F, he should be given one credit instead of four, etc.

Community Residents

1. Problems of Size. (I-III)

Often local police or campus security are overly zealous in enforcing parking regulations. Primarily the problem is housing. No ability to distinguish students from others. Often students are blamed for incidents in which less than 1 percent involved were students. Students have become a dominant political force. Can swing an election.

2. Advantages Accrued. (IV)

Art museums and other facilities alone worth much inconvenience. Overall environment of university is stimulating.

3. What Limits, Criteria do You Advise? (V)

No university can ignore the immediate community. Campus size changes communities, mostly because university has not made clear its goals.

4. Effect of Current Utilization Formulae on Campus Size. (VI)

Until change, peripheral facilities were used as "late study centers." Community still cannot use the campus anywhere near what it should. The relation could help to ease some of serious tension points.

PROFILE: CAMPUS H

Administrators

1. View on How Maximum Enrollments are Established. (I)

   An arbitrary decision that does not consider individual campus program, forces a fixed limit on a campus regardless of quality program.

2. What Criteria, Rationale are Used in Setting Limits on Campus? (II)

   Size is used only as a planning factor for facilities determination.

3. View Toward California Master Plan Ceiling for Your Campuses. (III)

   Every campus could reach its enrollment maximum in three years. However, this would be at the loss of the human scale. The real question is, "How fast should a campus grow?" Again the size of the campus should be used for physical planning, not program determination. Most important entity of a campus is a strong department.

4. Most Important Criteria Which Should be Used to Set Size. (III, B)

   As a system, there must be options of decisions, some varying with geographic area, others varying with campus specialties. Ideally program goals must be primary in all size decisions. Again ideally (but unrealistically) the teaching experience should be one-to-one. Since that is not feasible, must decide what is a reasonable ratio to perform good teaching. In any case the one-to-one ratio is an important concern. The farther away, the less personalized becomes the learning experience.

5. Are the Criteria Which Should be Utilized Actually Used in Planning? (III, C)

   Emphatically "no."

6. What Organizational Techniques are Utilized on Your Campus to Provide the Best Conditions of Learning Without the Tensions of Crowding? (III, E)

   The cluster college can do much toward relieving pressure of crowding. This concept should be adopted to ascertain its effectiveness. In addition, increased attention should be given to specialist campuses. "Environmental studies will be at [X campus]" Central administration could easily accomplish this. Not demanding enough from campuses to meet needs of immediate service area.

7. What are Some of the Basic Problems in the Application of Campus Size Ceilings? (IV, C)

   1. Development of departments and divisions after "topping out."

2. Keeping the whole facility (student mix, faculty mix) in balance.

3. Developing a realistic growth rate.

4. Once maximum is reached, how promote faculty.

All of these can be obviated by planning staff at each campus coordinated through central administration, with flexibility allowed, with maximum limit set realistically and adhered to. Comprehensive studies of each campus are a must.

8. When Does Dysfunction Occur? (IV, E)

In physical plant diffusion when distance exceeds ten minute interval. When a well planned building has to be modified or expanded to meet new enrollment needs.

In overspecialization of department when there is not adequate control over size and number of departments.

A campus-community can have dissolution in early stages of campus life. When faculty and students begin to relate more to outside than inside organization.

Administrative over-complexity need not occur--delegation of authority can solve this.

9. Considerations: Campus to Community. (V)

Up till very recently, none. Now county planner brought to campus, asked for advice. Liaison programs for professional endeavors. Committee on environmental studies established. In addition, if campus had discretionary funds for purchase of peripheral areas around campus, could allow for appropriate expansion without delay.

10. Complaints. (VI)

Faculty: Inadequate overall academic planning and institutional impersonalization

Community: Congestion; need more police, fire protection. In one sense a drain on small city economies.

Students: Impersonality

11. Effect of Current Utilization Formula on Campus Size. (VII)

For urban areas fine, but requirement should be monitored. If the community need is there, then the campus should be used. Has slowed down construction in classroom buildings, but has made no enrollment changes.

Faculty

1. Has the Enrollment Size of the Campus Created Problems? What are They? (I-III)

   Has increased work load--doubled majors in three years. Has radically altered the advising role. Not enough facilities, especially office space. In one department there are twenty faculty members, but only fifteen available spaces.

2. Enrollment Size Which Becomes Detrimental to Campus Mission. (IV)

   When each faculty has over 120 students in a semester. Too small class detrimental, 35 to 45 is ideal except in exceptional cases involving more specific techniques. Total campus in excess of 5,000 has begun duplication to accommodate more numbers.

3. Advantages Accrued Because of Size. (V)

   Larger campus usually allows more modern equipment and development of a master's degree program. Larger student body provides innovative possibilities. Classes almost always "make," so can offer new course options.

4. Other Criteria for Controlling Ceilings. (VII, C)

   Internally, program balance; externally, community needs. Cluster college to provide social and academic atmosphere. Need skilled implementors of Master Plan. Presently becoming factory-line operation. Russian and Chemistry will produce their eight students and this erodes quality. Becomes matter of basic survival. Produces rationalization among faculty and cheating among students.

Students

1. Problems of Size. (I-IV)

   No serious problems but becoming increasingly impersonal.

2. Advantages Accrued. (V)

   No great advantages; some advantage in having specialty libraries available, not usually available in small colleges.

3. Other Criteria. (VI, C)

   All classes should be kept to a maximum of twenty students. Otherwise interaction between faculty cannot be guaranteed in each class. Population in the general campus are served first. Only real restriction should be physical space and availability of faculty. Enrollment limits should be set at the departmental level.

Community Residents

1. Problems of Size. (I-III)

Campus parking fee forces students to park on arterial streets. Congestion is produced. Land values have become inflated. Faculty upper income, will pay more [for housing] and need it now. Community resistance to renting to students. Students often demand low-income housing, or shift to becoming street people. Some students actually prefer gypsy life style, makes for dramatic contrast with the community.

2. Advantages Accrued. (IV)

Land values have increased, property tax increased. New dollars in community; recreation program; can attend classes; children have better academic opportunities.

3. What Limits, Criteria do You Advise? (V)

Community should not be threatened by the campus but complemented by it. The geographic area in which campus is located should be preserved. Why do some campuses get so many students from other areas of the state? Not always program decision but environmental setting. If the students think this is a "good place" so should Master Plan. Campus administration should be primary setter of size limits, not the central administration.

4. How Will Increased Instructional Day Affect You? (VII)

Campus should be allowed to tailor program to community needs and establish appropriate time of classes, etc. Will produce some inconvenience in night traffic patterns, but adult education programs may mitigate this.

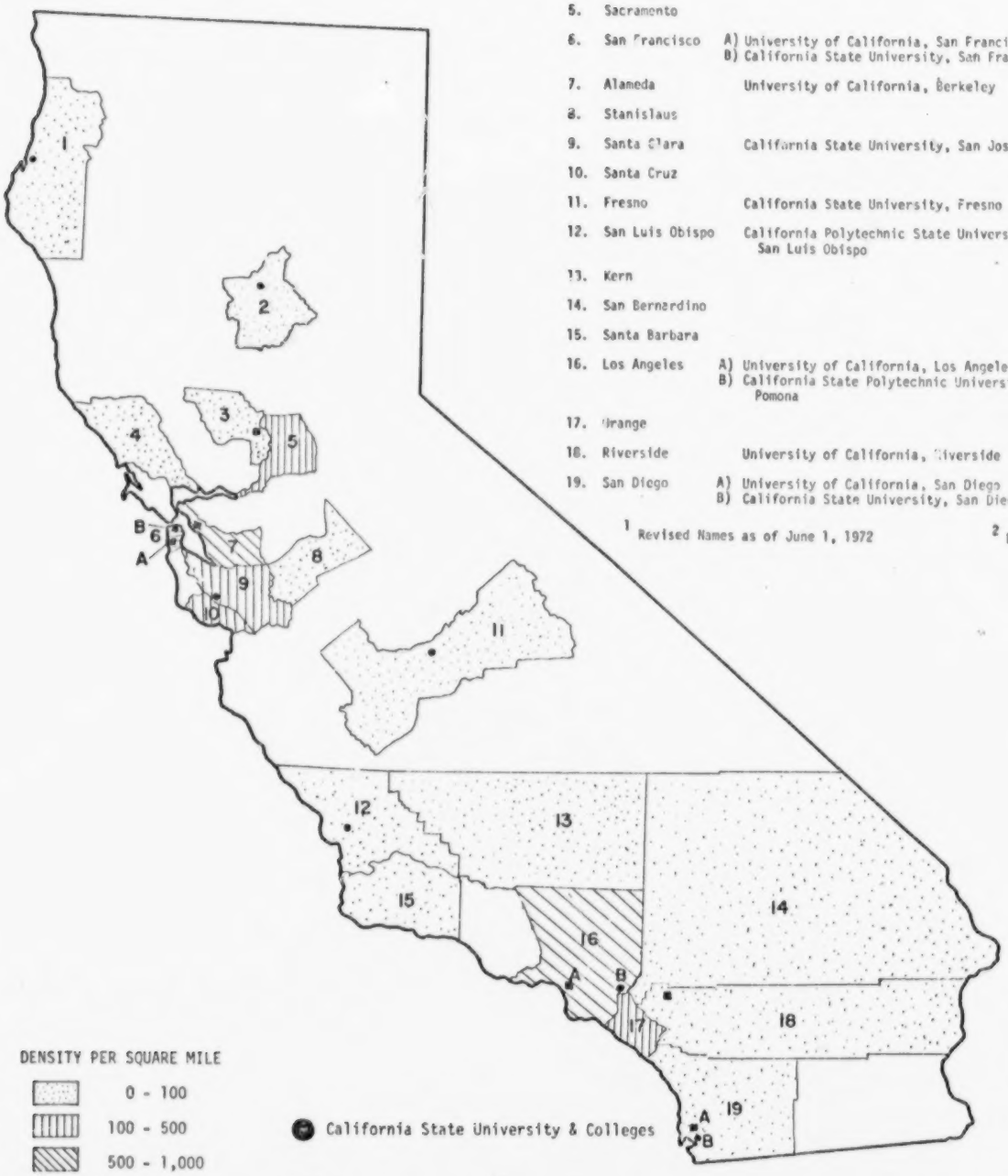
APPENDIX C

COUNTY LOCATION AND POPULATION MAPS

UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE UNIVERSITY AND COLLEGES
COUNTY LOCATION AND POPULATION
1940

	COUNTY	CAMPUS[1]	TOTAL POPULATION	DENSITY[2]
1.	Humboldt	California State University, Humboldt	45,812	12.8
2.	Butte	California State University, Chico	42,840	25.7
3.	Yolo	University of California, Davis	27,243	26.3
4.	Sonoma		69,052	43.7
5.	Sacramento		170,333	172.9
6.	San Francisco	A) University of California, San Francisco B) California State University, San Francisco	634,536	14,100
7.	Alameda	University of California, Berkeley	513,011	699.9
8.	Stanislaus		74,866	49.7
9.	Santa Clara	California State University, San Jose	174,949	134.2
10.	Santa Cruz		45,057	102.6
11.	Fresno	California State University, Fresno	178,565	29.8
12.	San Luis Obispo	California Polytechnic State University, San Luis Obispo	33,246	10.0
13.	Kern		135,124	16.5
14.	San Bernardino		161,100	8.0
15.	Santa Barbara		70,555	25.7
16.	Los Angeles	A) University of California, Los Angeles B) California State Polytechnic University, Pomona	2,785,643	684.3
17.	Orange		130,760	167.2
18.	Riverside	University of California, Riverside	105,524	14.7
19.	San Diego	A) University of California, San Diego B) California State University, San Diego	289,348	68.0

[1] Revised Names as of June 1, 1972 [2] Per Square Mile



DENSITY PER SQUARE MILE

- 0 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 10,000
- 10,000 -

California State University & Colleges

University of California Campuses

UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE UNIVERSITY AND COLLEGES

C-2

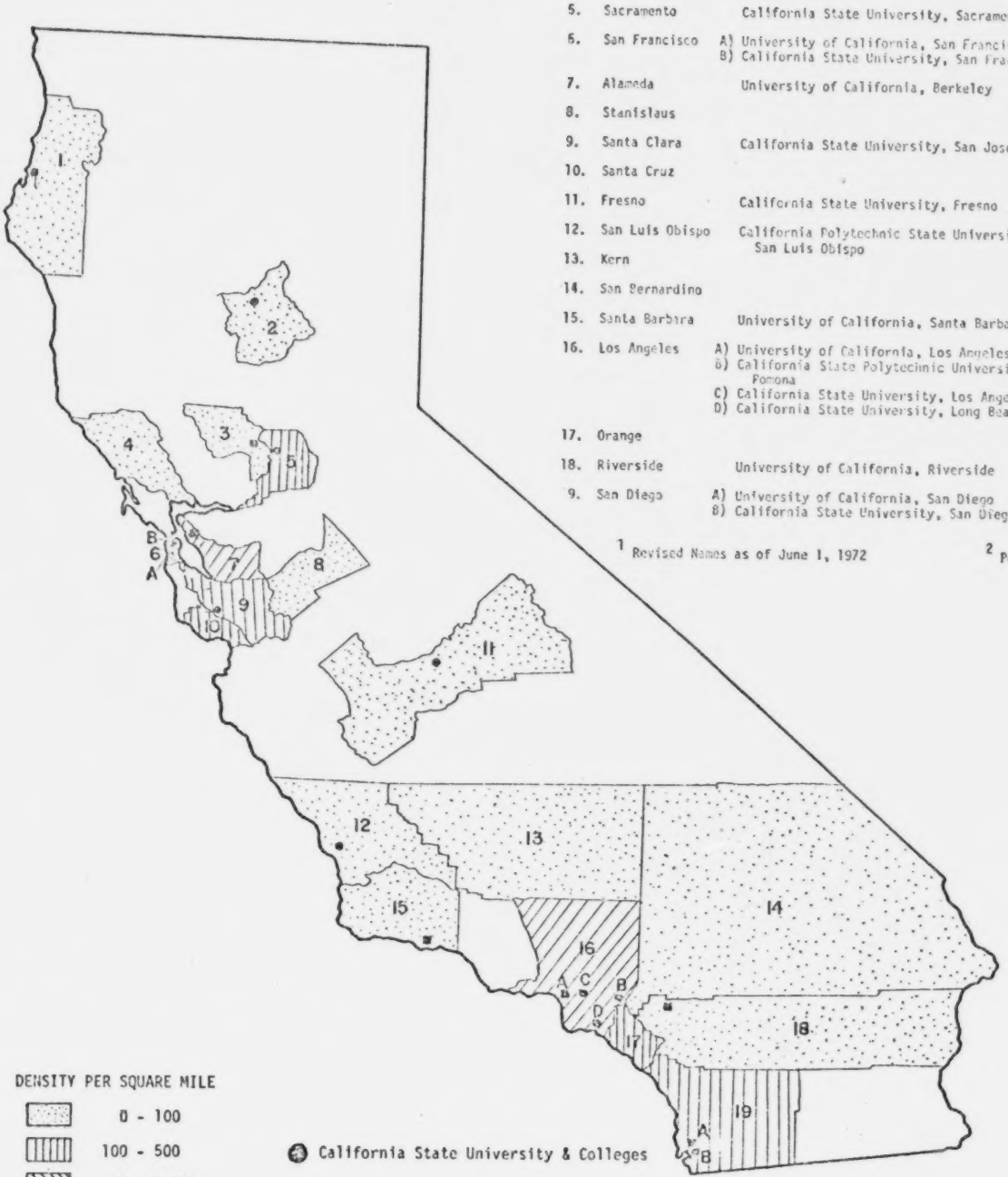
COUNTY LOCATION AND POPULATION

1950

	COUNTY	CAMPUS[1]	TOTAL POPULATION	DENSITY[2]
1.	Humboldt	California State University, Humboldt	69,241	19.4
2.	Butte	California State University, Chico	64,930	39.0
3.	Yolo	University of California, Davis	40,640	39.3
4.	Sonoma		103,405	65.5
5.	Sacramento	California State University, Sacramento	277,140	281.4
6.	San Francisco	A) University of California, San Francisco B) California State University, San Francisco	775,357	17,230
7.	Alameda	University of California, Berkeley	740,315	1,010
8.	Stanislaus		127,231	84.5
9.	Santa Clara	California State University, San Jose	290,547	222.6
10.	Santa Cruz		66,534	151.6
11.	Fresno	California State University, Fresno	276,515	46.2
12.	San Luis Obispo	California Polytechnic State University, San Luis Obispo	55,417	15.5
13.	Kern		228,303	27.9
14.	San Bernardino		281,642	14.0
15.	Santa Barbara	University of California, Santa Barbara	99,220	35.8
16.	Los Angeles	A) University of California, Los Angeles B) California State Polytechnic University, Pomona C) California State University, Los Angeles D) California State University, Long Beach	4,151,687	1,019
17.	Orange		216,224	276.5
18.	Riverside	University of California, Riverside	170,046	27.3
19.	San Diego	A) University of California, San Diego B) California State University, San Diego	556,803	130.8

[1] Revised Names as of June 1, 1972

[2] Per Square Mile



DENSITY PER SQUARE MILE

- 0 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 10,000
- 10,000 -

California State University & Colleges

University of California Campuses

6-72

UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE UNIVERSITY AND COLLEGES

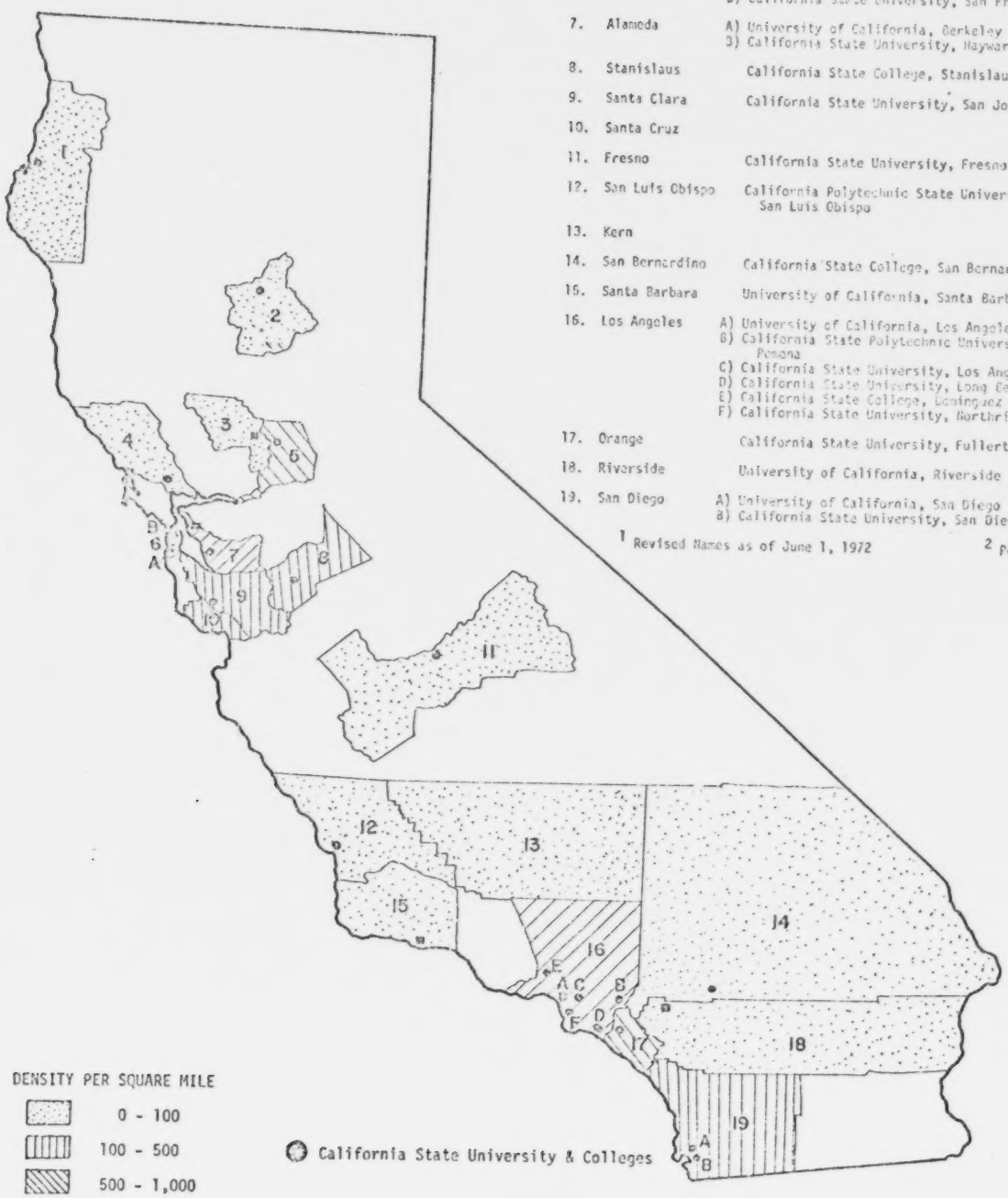
COUNTY LOCATION AND POPULATION

1960

	COUNTY	CAMPUS[1]	TOTAL POPULATION	DENSITY[2]
1.	Humboldt	California State University, Humboldt	104,892	29.4
2.	Butte	California State University, Chico	82,030	49.3
3.	Yolo	University of California, Davis	65,727	63.6
4.	Sonoma	California State College, Sonoma	147,375	93.3
5.	Sacramento	California State University, Sacramento	502,778	511.5
6.	San Francisco	A) University of California, San Francisco B) California State University, San Francisco	740,316	15,451
7.	Alameda	A) University of California, Berkeley B) California State University, Hayward	908,209	1,239
8.	Stanislaus	California State College, Stanislaus	157,294	104.9
9.	Santa Clara	California State University, San Jose	642,315	493.3
10.	Santa Cruz		84,219	191.8
11.	Fresno	California State University, Fresno	365,945	61.4
12.	San Luis Obispo	California Polytechnic State University, San Luis Obispo	81,044	24.4
13.	Kern		291,984	35.8
14.	San Bernardino	California State College, San Bernardino	503,591	25.0
15.	Santa Barbara	University of California, Santa Barbara	168,962	61.7
16.	Los Angeles	A) University of California, Los Angeles B) California State Polytechnic University, Pomona C) California State University, Los Angeles D) California State University, Long Beach E) California State College, Dominguez Hills F) California State University, Northridge	6,038,771	1,487.4
17.	Orange	California State University, Fullerton	703,925	900.2
18.	Riverside	University of California, Riverside	306,191	42.7
19.	San Diego	A) University of California, San Diego B) California State University, San Diego	1,033,011	242.8

[1] Revised Names as of June 1, 1972

[2] Per Square Mile



DENSITY PER SQUARE MILE

- 0 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 10,000
- 10,000 -

California State University & Colleges

University of California Campuses

UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE UNIVERSITY AND COLLEGES
COUNTY LOCATION AND POPULATION
1970

	COUNTY	CAMPUS[1]	TOTAL POPULATION	DENSITY[2]
1.	Humboldt	California State University, Humboldt	99,962	27.0
2.	Butte	California State University, Chico	101,969	61.0
3.	Yolo	University of California, Davis	93,788	97.0
4.	Sonoma	California State College, Sonoma	204,885	127.0
5.	Sacramento	California State University, Sacramento	631,498	647.0
6.	San Francisco	A) University of California, San Francisco B) California State University, San Francisco	715,674	15,903
7.	Alameda	University of California, Berkeley	1,073,184	1,464
8.	Stanislaus	California State College, Stanislaus	194,506	128.0
9.	Santa Clara	California State University, San Jose	1,064,714	819.0
10.	Santa Cruz	University of California, Santa Cruz	123,790	281.0
11.	Fresno	California State University, Fresno	413,053	69.0
12.	San Luis Obispo	California Polytechnic State University, San Luis Obispo	105,690	33.0
13.	Kern	California State College, Bakersfield	329,162	40.0
14.	San Bernardino	California State College, San Bernardino	684,072	34.0
15.	Santa Barbara	University of California, Santa Barbara	264,324	96.0
16.	Los Angeles	A) University of California, Los Angeles B) California State Polytechnic University, Pomona C) California State University, Los Angeles D) California State University, Long Beach E) California State College, Dominguez Hills F) California State University, Northridge	7,032,075	1,728
17.	Orange	A) California State University, Fullerton B) University of California, Irvine	1,420,386	1,816
18.	Riverside	University of California, Riverside	459,074	63.0
19.	San Diego	A) University of California, San Diego B) California State University, San Diego	1,357,854	318.0

[1] Revised Names as of June 1, 1972 [2] Per Square Mile